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Editorial

The Port of Hamburg.

Germany's chief sea port, Hamburg, is situated on the River Elbe about 62 miles from where the river converges with the open sea, the larger part of the harbour being found on the left bank of the river and bounded by the Prussian province of Hanover.

The first harbour projects of any importance at Hamburg were commenced in the middle of the 18th century when the first quay was built, and from this date onwards construction and enlargements gradually took place on an uninterrupted scale, and to-day Hamburg is in a position to accommodate the largest vessels in the world.

Hamburg's position on the river Elbe has been a great asset in respect to the goods traffic at the port, inasmuch as it is an ideal transhipment point for cargo destined to the hinterland of Germany, as the river Elbe and its tributaries cover a vast area of Northern Europe. This transhipment traffic has necessitated the setting aside of large areas in the port of Hamburg for the river barges which carry goods to their final destination.

The port is well equipped for dealing with traffic of any description, having warehouses capable of accommodating all types of goods and cranes capable of dealing with commodities of every description. Altogether the Port of Hamburg has a total of 2,020 lifting appliances available for goods transhipment.

The latest statistics available for the Port of Hamburg are for 1930 and these show that 20,350 ships with a total net registered tonnage of 21,990,248 arrived at the port of Hamburg and 22,744 ships with a net registered tonnage of 22,204,578 departed from the port. The value of goods passing through the port in 1930 was:—Imports Rm.5,229,277,750, and Exports Rm.4,850,541,000.

The Port of Hamburg forms the supplement for this month's issue and we are indebted to the Committee of Trade, Shipping and Industries for the Port of Hamburg for their kind permission to reproduce the illustrated article which appears on another page.

Ribble Navigation.

One of the most remarkable post-war developments has been the growth of the petrol traffic at Preston. Eight years ago, only one firm had a storage depot at the dock, and only one tanker arrived. This year 35 vessels came in, all ocean-going craft of high capacity. There are six firms, quite a colony of storage tanks, with special roads, power units, water supply, and equipment. The storage capacity has grown to 12¾ million gallons and imports have grown from 3,661 tons in 1923 to 200,912 tons last year. Re-exports of motor spirit and oil to other ports has already helped to improve the export returns from the dock. The improvement in the channel has led to an increase in the number of foreign vessels coming to Preston. Since 1911 the average tonnage of each of these vessels has increased from 676 to 1,416 tons; which means that foreign ships are now regularly coming to Preston twice as large as those that came before the war. When the last stretch of training walls, now being constructed, is completed, this feature will become still more prominent. The port has, for many years, shown a healthy working surplus which tends to improve, and the deepening of the channel right out to sea, and the rapid reducing of the loan charges promises a bright future for the Ribble undertaking.

The New Fish Dock at Grimsby.

The work on the new Grimsby Fish Dock is proceeding apace, but the contractors have not had an easy time. They have had a gigantic fight with the tides in their task of reclaiming the necessary part of the Humber beach for the dock. The fight between the contractors and the sea has been going on almost incessantly for the past eighteen months, but the end is in sight and the contractors are to be congratulated upon the victory which they have thus won. The sea is apparently loath to give up its spoils for even to-day after a sea wall has been built up from thousands of tons of chalk, the tides still find inroad past this barrier. A weak spot upon which the contractors are concentrating their energies is where the old sewerage pitfall from Grimsby entered the Humber. This weakness was soon revealed to the contractors, for as fast as large quantities of chalk were dumped down at the spot, it disappeared into the soft mud. The broadening of the river wall at this particular spot did not tend to solve the problem and at the present time steel piles are being driven in outside the wall to provide the foundation for an additional barrier. The tide meanwhile is being allowed to have its own way, for a sluice and sluice gates have been erected and the gates are opened at high water to admit the sea and later when the tide has fallen they are re-opened to allow the water to run out of the workings. However, work on the erection of the sea wall has so far advanced that already work is actually in progress with the construction of the dock. Night and day excavation work is in progress and already hundreds of tons of black muddy soil have been removed from the site of the dock by means of huge mechanical scoops which lift the soil into side tipping wagons which in turn deposit their load further along the beach where new sidings for the dock will be made. The excavations are to be carried out in two layers each of ten feet.

The construction of a new lock pit within a short distance of the existing east pier of the Grimsby fish dock is presenting a big difficulty owing to the nature of the foundation. Some idea of the nature of the soil at this point may be gathered by the fact that when the seven-ton concrete piles are first pitched they sink some thirty feet under their own weight before pile-driving operations are commenced. In order to build the lock pit the opening in the sea wall which will form the entrance to the dock has had to be dammed with chalk and steel piles, and weight of the chalk used on this has had the effect of moving the east pier of the present fish dock three inches.

The Port of Lisbon.

Owing to the insufficiency of the quayage at present available for shipping in the Port of Lisbon, it has been found necessary, in order to meet the present needs of traffic, to enlarge the port and to lay down additional quays.

At the present time in the Port of Lisbon there is a total length of quayage of 8,854 metres and a depth of water varying from 6 to 9.50 metres. There are also many large docks, the most important of which is the Alcantara Basin, which has a water surface of 152,596 sq. metres.

The port is now being enlarged and the work is taking place to the east of the Santa Apolonia quays and includes the laying down of additional quayage to the extent of 4,000 metres, which when completed will have a depth varying from 6 to 8 metres. These new quays are being constructed of concrete blocks of an average weight of 80 tons each.

Also included in these new works is the construction of a fishing harbour which is to be built near Lisbon, and the enlargement of the Alcantara quay is also under consideration.

The work is proceeding satisfactorily and at the present time over 300 metres of quayage have been completed and it is expected that the completion of the whole work will take another two years.

French Harbour Matters

THE Chamber of Commerce and Industry at Boulogne-sur-Mer is showing increasing activity in regard to the improvement of the efficiency of the port, and in the course of a recent meeting, the necessity of building some new concrete warehouses to be fitted with electric cranes was discussed.

The Chamber of Commerce and Industry at Rouen has published the following statistics concerning trade at that port during the month of May, 1932:—

	May	
	1932	1931
Ships Arrived	350	380
Imports (Tons)	569,558	731,519
Ships cleared with Cargo ...	93	94
Exports (Tons)	61,257	62,984
Total Traffic	630,815	794,503

There has been a considerable decrease in imports during May, 1932, compared to May, 1931, while exports have shown a smaller decrease. It may be worth while examining the following figures regarding trade at Rouen during the first five months and the first six months of 1932:—

	January-May		January-June	
	1932	1931	1932	1931
Ships Arrived	1,673	1,704	2,050	2,056
Imports (Tons)	2,824,538	3,410,339	3,430,618	4,048,828
Ships cleared with Cargo ...	452	489	542	586
Exports (Tons)	280,380	329,187	341,391	399,152
Total Traffic (Tons) ...	3,104,918	3,739,526	3,772,009	4,447,980

Of which imports included:—

	January-May		January-June	
	1932 Tons	1931 Tons	1932 Tons	1931 Tons
Coal	1,424,784	2,061,955	1,706,386	2,410,660
Oil	579,700	511,893	705,538	615,057
Phosphates, etc.	149,725	169,517	178,846	197,256
Lumber	53,188	80,955	76,138	116,023
Woodpulp, Paper, etc ...	100,270	126,272	131,841	163,197
Wines and Alcohol	232,111	277,054	279,974	323,172

Imports at Rouen during the first five months of 1932 have shown a decrease of 585,801 tons, an average of 117,160 tons per month, while during the first six months of 1932 they have shown a decrease of 618,210 tons, an average of 103,035 tons per month, which means that the situation has improved during the month of June. It should be noted that while in the first six months of 1931 the imports of coal at Rouen represented 60 per cent. of the total goods unloaded, in the corresponding period of 1932 the arrivals of coal represented a little over 50 per cent. of the total maritime imports at Rouen. Yet, coal occupying the first position among the items of imports, it may be interesting to consider the following figures regarding the various countries from which coal has been imported at Rouen:—

	January-June		
	1930 Tons	1931 Tons	1932 Tons
United Kingdom ...	2,120,699	1,706,851	1,300,475
Belgium	—	6,775	—
Holland	—	11,024	3,059
Germany	505,473	417,089	221,697
Poland	144,454	215,976	114,918
Russia	75,809	32,118	28,312
Tonkin	—	20,997	37,875

According to figures which have been published at the port of La Rochelle (Ville et Pallice), traffic during the first six months of 1932 included 473,784 tons against 500,156 tons during the corresponding period of 1931. It appears that the slight decrease of 26,372 tons is due chiefly to the action taken by the French Government against the import of foreign coal. As a matter of fact, the arrivals of coal at La Rochelle during the first six months of 1932 was 250,438 tons against 301,756 tons during the corresponding period of 1931, with a decrease of 51,318 tons, while the imports of phosphates totalled 37,239 tons in the period from January to June, 1932, against 24,028 tons in the corresponding period of 1931; nitrates 17,976 tons against 8,528 tons; oil 58,347 tons against 41,149 tons, etc. During the first six months of 1932 there has been an important increase in the arrival of cereals, which reached 41,360 tons against 9,708 tons in the corresponding period of 1931.

The French Government is following with interest the question of the development of harbour facilities along the coast of the French West African Colonies, and particularly at Dakar and Conakry, since it is felt that accommodation for certain special trades is very poor. In this connection it is pointed out that steps will be taken to provide the port of Conakry with better facilities to handle the export of bananas.

According to statistics the arrivals at Kenitra (Morocco) included 93 ships, representing 31,312 net register tons and carrying 255,031 tons of goods against 220,000 tons in the corresponding period of 1931. Exports included 2,004 tons during May, 1932, against 1,700 tons during the month of May, 1931.

Port of Southampton Topics

Statistics for June show Further Decreases.

SOUTHAMPTON DOCK statistics continue to reveal the extent of the depression which has settled upon the shipping industry. Some time ago there was a confident hope that the downward tendency had been arrested, but the figures issued by the Southern Railway for June show a serious falling off compared with June of last year, which, it will be recalled, was a fairly lean period for ships and shipping.

The latest monthly returns show that there has been a further decrease in all the essential features of dockland activities—the number of ships handled, the total of passengers using the port, and the quantity of cargo dealt with.

In June of last year the number of vessels using the port was 762, a comparatively low figure, but during last month the total dropped to 639. In other words, there was roughly a falling off of 30 ships per week. The number of vessels inward bound fell from 381 in June of last year to 317 in June, 1932, and the outward ships numbered 322, a decrease of 59.

The effect on the gross tonnage using the port was, of course, most marked. In June, 1931, the total tonnage was 3,380,311; in June, 1932, the figure was 2,785,210—a drop of over half a million tons.

The inward tonnage fell from 1,750,250 to 1,376,426, a decrease of 373,824 tons. The outward tonnage did not drop quite so much, but the total of 1,408,784 tons during June this year showed a falling away of 221,277 tons compared with the same period of last year.

The same story has to be told in regard to cargo, and it is the more regrettable because of the success of the efforts made in the years following the war to increase the consignments passing through the port. For quite a long period Dock House was able to record increases in the freight tonnage handled and new openings were being exploited in various directions. The set-back is serious.

The aggregate for the month of June, 1932, was 87,224, compared with 95,423, or a decrease of 8,199 tons. The inward cargo fell by 2,016 tons to 63,181 tons, and the outward freight dropped from 30,226 tons to 24,043—a decrease of 6,183 tons.

A heavy drop is also recorded in the passenger movements. The total passing through the port was 46,551, compared with 54,800 in June last year, a decrease of 8,249. The number of arrivals was 25,636 against 29,514 a year ago, and the embarkations totalled 20,915 against 25,286, or a falling-off of 4,371.

Atlantic Passenger Trade Larger than Expected.

Although the totals of passengers crossing the Atlantic this summer have been small, they have been larger than was anticipated early in the season. The small ships have been more popular than the big ones, for thousands of passengers, in view of the shortage of money, have preferred the less expensive cabin and tourist accommodation.

Few of the big ships have touched really high figures this season, and but for the Eucharistic Congress, which attracted tens of thousands of pilgrims to Dublin, via the Western Ocean, the totals would have been very lean indeed. The average passenger total for individual "monster" class vessels during the past two months has been round about 1,200, whereas, in normal times, 1,700 or 1,800 were considered not unusual. The North German Lloyd liners "Europa" and "Bremen" have been the most successful and consistent ships for travel bookings this year, and the "Europa," which on one eastbound voyage in June brought 1,905 passengers, holds the record thus far this season.

The number of first-class passengers has fallen very much, and few vessels have managed to attract more than 250 on a single eastbound voyage.

The Port of Hamburg

The Foundations for the Development of the Port of Hamburg

HAMBURG forms the most easterly link in the chain of great North Sea ports that constitute the gates through which a considerable percentage of the trade between Europe and the overseas countries must necessarily pass, and there can be no doubt that this fact has very largely contributed to her position as an important centre of international traffic. It is therefore proposed to briefly review her geographical situation before giving a detailed description of her port and its equipment.

Billwarder Bucht, where hundreds of Elbe Barges are moored.

The Position of Hamburg in Relation to Neighbouring European Ports.

The south-eastern corner of the North Sea is the terminus of one of the world's most important highways of commerce. Trade routes emanating from all quarters converge there, and the ocean-going ships, after entering the wide and deep estuary of the Elbe, proceed up-river for about 62 miles until they discharge their cargoes at Hamburg. In both directions—eastbound and westbound—there is ample opportunity for them to supplement their cargo and to discharge part of it *en route* without any serious loss of time. They are thus able to collect goods for their return trips at intermediate ports, which materially enhances their freight-earning capacities. The proximity of Hamburg to other large seaports facilitates the proper stowage of cargoes with due regard to weight. International trade has caused the development of economic areas independent of political boundaries, and as Hamburg, in conjunction with the other North Sea ports, has shared in this development, it is obvious that she has thereby helped her hinterland to acquire additional markets throughout the world.

The Position of Hamburg in Relation to the Sea.

The close proximity to Hamburg of the other large seaports, however, has also given rise to a struggle for the possession of the industrial hinterland. Such struggles are inherent in the very nature of commercial enterprise, and there is therefore nothing unhealthy about them. The weapons employed in fighting them out are not restricted to endeavours aiming at an increase in port efficiency, but also comprise the various efforts made to utilise most profitably the existing geographical advantages.

Here, again, the determining factor is the position of the port in relation to the sea. The freight rates for the carriage of goods depend to a limited extent only on the length of the ocean voyage. As soon as a vessel has entered the estuary of the river on which the port she is making for is situated, she has to compete with the railroad as a freight carrier, and after that the distance factor acquires much greater importance than before.

The fact that the sea route to Hamburg is longer than that to other North Sea ports might at first be looked upon as a disadvantage, but it is really a great advantage in favour of Hamburg, and has greatly benefited the development of her foreign trade. The major part of ocean-borne cargoes is not destined for the ports where the sea voyage terminates, but for places situated in the interior of the country, and rivercraft and railroads have to carry them to their final destinations. The transport charges per mile, however, made by the on-carriers are many times higher than those made by the ocean carriers. In fixing the on-carrying rates, especially those charged by the railroads, almost every mile forms an important consideration, whereas in the case of the ocean freight rates it often happens that a difference of several hundred miles is left out of account. The prosperity of a seaport very largely depends on the extent of its hinterland which, in its turn, is partly determined by the rate policy of the on-carriers. For these reasons Hamburg has spared no efforts and no money to extend the navigability of her river as far up-stream as geographical conditions permit, i.e., up to the point where the latter is now crossed by the first of the three bridges that span it in Hamburg, thus shortening in like measure the length of the route on which the merchandise is subject to the higher rates of freight.

Hamburg Sud Shunting Station in the Free Port Area.

Few of the large Continental seaports are situated so close to the heart of Central Europe, to its densely populated manufacturing areas, to its important mining and agricultural centres, and to its flourishing commercial emporiums, as Hamburg. Her extensive hinterland is not limited by any political frontiers, and all parts of it benefit from the favourable freight rates she can offer. Her situation in regard to the sea has enabled her to acquire a position which permits her to extend the sphere of her influence in every direction.

The Importance of the Elbe as a Waterway.

The advantages Hamburg has derived from her maritime position are considerably augmented by those derived from her situation on the River Elbe. The mere fact that the transfer of cargo from the ocean-going vessel to the inland carrier is effected at a place situated a

The Port of Hamburg—continued

A Canal in the Warehouse Town, Free Harbour Area.

long distance from the sea does not by itself satisfy the demand that the cost of transportation should be as low as possible. The Upper Elbe, with its numerous tributaries and canal connections, is a waterway of very considerable practical importance and supplements the advantages already described. Experience has shown that railways—notwithstanding their advantages in conection with a large variety of traffic matters —cannot carry merchandise to and from a seaport in such quantities as to permit its development into a first-class transhipment centre.

Large quantities of imported goods that would not be attracted to a port connected with the interior by railroads only find their way to Hamburg because they can there be transhipped to rivercraft. In like manner the excellent system of waterways which extends far into the hinterland attracts to Hamburg numerous goods intended for export. The River Elbe, therefore, is of vital importance to the Port of Hamburg as a traffic carrier, and is bound—like every other suitable natural waterway—to contribute very largely to the stability of trade and traffic conditions throughout Central Europe. Hamburg, situated as it is at a convenient distance from the place where this great river empties itself into the sea, has been entrusted with the task of acting as the link connecting the world's markets with the commerce of the large area served by the Elbe and its canal system.

The Network of Waterways linked up with Hamburg.

The following brief description shows how far the area served by the Elbe and its connecting waterways extends, and which are the industrial districts tapped by them.

That part of the river course which extends from Hamburg to the " Elbe I " lightship is called the Lower Elbe (Unterelbe). It has a total length of about 85 miles. Some 42 miles below Hamburg the Kiel Canal (Kaiser Wilhelm-Kanal) branches off from it. The Kiel Canal is the shortest and the safest sea route connecting the North Sea and the Baltic, and through its completion the area served by the Port of Hamburg has received considerable additions. A still further increase will be effected if and when the projected Hansa Canal is built. The latter is intended to branch off from the Lower Elbe within the Port of Hamburg itself and to connect the Elbe with the Ems-Weser Canal, via Bremen, and—beyond that—with the Ruhr and Rhine, so that 1,000-ton river barges will be able to proceed to these districts from Hamburg or Bremen, or *vice versa*. Owing to its great economic importance the Hansa Canal project occupies a prominent position among the schemes for creating additional waterways in Germany.

Above Hamburg, near Lauenburg, the Elbe-Trave Canal branches off from the Elbe. It can be used by river barges and sea-going lighters to proceed to and from Lübecker Bucht and thus constitutes another outlet to the Baltic. Mecklenburg has canal connection with the Elbe by the Elde Waterway, whilst the system of Brandenburg waterways, which connects the important industrial district of which Berlin is the centre with the Elbe, branches off from the latter higher up the river, its three components being the River Havel, the Plauer Canal, and the Ihle Canal. Beyond Berlin the Oder-Spree Canal and the Hohenzollern Canal connect the Elbe with the Oder, thus linking it up with Silesia as well as with the Baltic port of Stettin. A still further connection i.e. with the Vistula and its tributaries, is effected by the system of waterways consisting of the Warthe (the biggest tributary of the Oder), the Netze, the Cromberg Canal, and the Brahe.

If we trace the course of the Elbe still further upriver, the next important junction of waterways (after the Brandenburg system of waterways) is that between the Elbe and Saale, some distance higher up than the important industrial area surrounding Magdeburg. The Saale, together with the Unstrut, its largest tributary, drains the whole expanse of country as far as the foothills of the Harz Mountains and the slopes of the Thuringian Forest. The projected Saale-Leipzig Canal, if and when completed, will form an important part of the southern branch of the Midland Canal (Mittellandkanal). The reach of the Elbe which, politically, belongs to the Prussian province of Saxony and the federal State of Anhalt, is succeeded—in the upriver direction—by that which belongs to the federal State of Saxony, the whole of this section being lined with ports and transhipment places much frequented by rivercraft. The Elbe is even navigable beyond the German-Czechoslovak frontier, up to Melnik, whilst its large tributary in that part, the Moldau, is navigable as far as Prague. The Czechoslovak reach of the Elbe is also lined with numerous river ports.

The extent of this huge system of waterways, all of which are in direct connection with Hamburg, and thus with the open sea, may be gauged by a glance at the following figures, showing the distances between Hamburg and some important towns thus connected with it.

From Hamburg to	Cuxhaven	62	miles
,, ,,	Kiel	106	,,
,, ,,	Lubeck	76	,,
,, ,,	Magdeburg	187	,,
,, ,,	Halle	275	,,
,, ,,	Dresden	356	,,
,, ,,	Prague	487	,,
,, ,,	Berlin	231	,,
,, ,,	Stettin	331	,,
,, ,,	Breslau	506	,,
,, ,,	Gleiwitz	630	,,
,, ,,	Danzig	620	,,
,, ,,	Thorn	520	,,
,, ,,	Posen	462	,,

The Waterways as Carriers of the Goods Traffic.

Without the network of waterways just described, which is linked up with Hamburg by the Elbe and which affords easy communication not only with the highly productive districts of Northern, Central and Eastern Germany, but also with considerable portions of some neighbouring countries, trade intercourse between Hamburg and her hinterland could never have become as intimate as it actually is. It is a general rule that the rates for water transportation are in many cases lower than the freight charges made by the railroads, and the difference

Beyond the Elbe Bridges: Growing Industrial Districts at the Fringe of the Port.

The Port of Hamburg—continued

between the two is an important consideration where such long distances as appear in the preceding list are concerned. This consideration applies with particular force to the traffic in bulk goods like grain, coal, ore, mineral earths, timber, and building stones, which form 75 per cent. of the goods carried by the waterways of Germany. The waterways in their turn exercise a considerable influence upon the rail traffic, as is most clearly shown by the fact that there are no less than 132 more or less important river ports in Germany, all of which are equipped with extensive facilities for transhipment from barge to railroad and *vice versa*. As many as 52 of them are situated on the waterways connected with Hamburg, this figure being exclusive of numerous minor transhipment places, both private and public.

Hamburg is the fourth largest of the German river ports, taking for a measure of comparison the quantity of goods transhipped to and from the river vessels frequenting them. The premier position in this regard is occupied by Duisburg-Ruhrort, which is by far the largest German river port, and which handles more than four times the volume of river-borne trade handled by Hamburg. Its leading position, however, is entirely due to coal shipments. Among the river ports handling cargoes of all kinds the only ones ranking before Hamburg are Mannheim-Ludwigshafen and Berlin, but the difference in the respective traffic figures is but slight.

The distribution of the river-borne goods traffic to and from Hamburg among the various areas served is shown in the diagram at the top of this page.

The Position of Hamburg in Relation to the Continental Railway System.

It is but natural that the place where sea-borne traffic and river-borne traffic meet should also have developed into an important railway junction. Notwithstanding the large quantities of bulk goods transhipped to and from rivercraft in the Port of Hamburg, the latter is also, and very essentially, a port where general cargo is handled; and in this traffic railways play an important part.

It is looked after by the six railroad lines converging upon Hamburg. Three of them join at Hamburg south of the Elbe, proceeding to Hamburg *via* the Elbe bridges, whilst the remaining three, viz., those from the north and east, reach Hamburg separately. The three southern lines are: (1) the line from Bremen (west of Hamburg); (2) that from Hanover *via* Ulzen and from Madgeburg *via* Stendal (south and south-east of Hamburg respectively), and (3) that from the Hamburg outport of Cuxhaven, handling a considerable amount of passenger and fishery products traffic. Among the three northern lines the most important one is that from Berlin and Eastern Germany *via* Wittenberge (east of Hamburg), followed by that from Königsburg, Danzig, Stettin and Lübeck (north-east of Hamburg), which—by way of Warnemünde and Stralsund—also connects the Scandinavian countries with Hamburg. Finally, there is the line from Kiel, Tondern, Flensburg and Schleswig *via* Neumünster (north of Hamburg).

The goods traffic handled by these six principal lines is so considerable that Hamburg takes the third place in respect of rail-borne goods traffic. The only German towns exceeding it as regards such traffic are Berlin and Mannheim.

The distribution of the rail-borne goods traffic moving to and from the group of towns of which Hamburg is the centre is shown in the diagram at the bottom of this page.

Owing to the absence of statistical information it has not been possible to include that section of the rail-borne traffic which is concerned with the on-carrying of the goods after they have left the up-river barges, nor that handled by the lines acting as feeders to the latter. The map, therefore, does not show the ultimate ramifications of the transportation system serving the hinterland of Hamburg.

The Sea-borne Traffic of the Port of Hamburg.

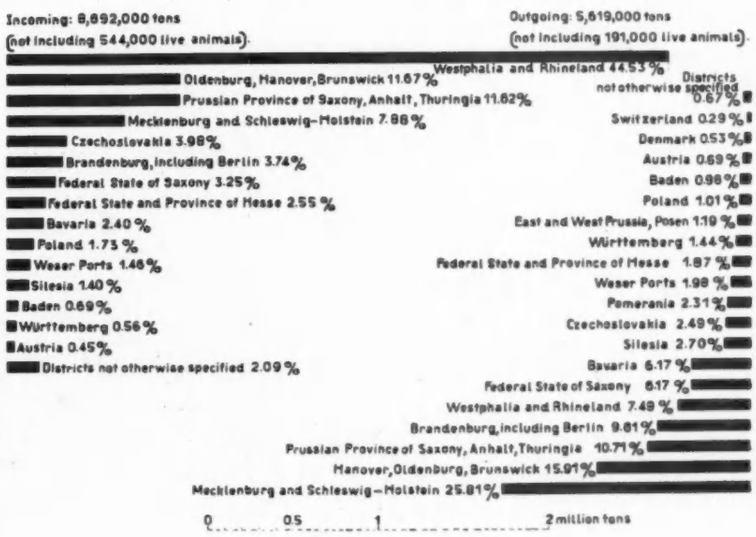
We shall now discontinue our description of the hinterland served by the Port of Hamburg and of the land and water connections between the two, and revert to the subject of Hamburg's maritime traffic from which our appreciation of the position of the great sea-port started. The district linked up with Hamburg by means of waterways and railroad lines is only a part of the area whose overseas communications pass through her port. Large quantities of goods intended for exportation reach Hamburg by the sea route from other German ports and from the North European countries adjoining Germany. Regular weekly services are maintained by the shipping companies to collect such cargoes and to carry them to Hamburg. There they are transhipped to the overseas steamers, and similar work is performed in the reverse direction, i.e., in the on-carrying of imports from overseas countries to their final destinations. We must therefore bear in mind that, in addition to serving the needs of its immediate hinterland with the aid of its railroad and inland waterway connections, and quite apart from the needs of Greater Hamburg itself—which are by no means insignificant——the Port of Hamburg has to handle the considerable volume of through-freight cargo collected and distributed by it *via* the sea route. An important link in this European freight traffic is the Kiel Canal already referred to.

If we base our comparison on the net register tonnage of the ships concerned, we find that the sea-borne traffic of Hamburg is about evenly divided between European and extra-European countries. The proportion in 1930 was 47.5 : 52.5.

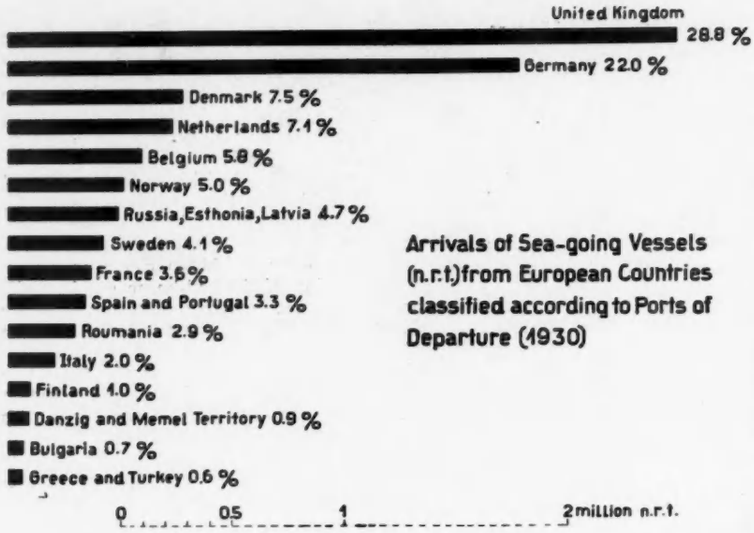
The total sea-borne traffic of Hamburg (i.e., sailings and arrivals combined) is shown by the following figures:—

1913—31,700	ships	aggregating	28.6	million	net register tons
1928—37,600	,,	,,	42.6	,,	,,
*1929—40,800	,,	,,	44.7	,,	,,
*1930—43,093	,,	,,	44.2	,,	,,

*Including the ports of Altona and Harburg-Wilhelmsburg and the area administered by the Hamburgisch-Preussiche Hafengemeinschaft.



The Port of Hamburg—continued



Arrivals of Sea-going Vessels (n.r.t.) from European Countries classified according to Ports of Departure (1930)

The incoming sea-borne traffic from European ports in 1930 (10.44 million net registered tons), excluding intermediate ports of call, is illustrated by the diagram at the top of this page.

The incoming sea-borne traffic from non-European countries (11.55 million net registered tons) was distributed as shown in the diagram at the bottom of this page.

The figures for the outgoing sea-borne traffic (12.46 million net registered tons to European and 9.75 million net registered tons to non-European destinations) do not essentially differ from those for the incoming traffic.

General Description of the Harbour Plan

General Topography of the City-State of Hamburg.

The Free City of Hamburg, one of the federal States that make up the German Republic, covers an area of about 160 square miles. It comprises the four municipalities of Hamburg, Bergedorf, Geesthacht and Cuxhaven, as well as 28 rural communes. The share of the municipality of Hamburg in this total is about 52½ square miles, and that of the Ritzebüttel district—the detached portion near the mouth of the Elbe with the outport of Cuxhaven—about 30 square miles. The population of the whole State (October 10th, 1929) was 1,226,000, and that of the municipality of Hamburg alone 1,138,000.

The larger part of the Hamburg State territory is located on the right or northern bank of the River Elbe, which, generally speaking, flows through it in the direction from east to west. This part is bounded by the Prussian province of Schleswig-Holstein. The Schleswig-Holstein towns of Wandsbek and Altona situated at the very doors of Hamburg (to the east and west respectively) belong to the same economic unit as the latter. The smaller portion of the Hamburg State territory, viz., that containing the greater part of the harbour, is on the left bank of the Elbe and is bounded by the Prussian province of Hanover. The Hanoverian town of Harburg-Wilhelmsburg is in close vicinity to Hamburg on that side.

If we disregard a few enclaves surrounded by Prussian territory (viz., Moorburg in the south, Geesthaucht in the east, Farmsen, Volksdorf, Wohldorf and Gross-Hansdorf in the north), we may say that the Hamburg State territory is made up of three sections radiating from the neighbourhood of the Elbe bridges and extending to the north, west, and south-east respectively.

Topography of the Harbour Area.

The topographical conditions of the area on the northern bank of the Elbe, i.e., the municipal section of the State area, do not favour the construction of harbour facilities on that side. Centuries ago a large number of small low-lying islands occupied most of the district between Hamburg and Harburg. Their size and shape constantly altered, because they were subject to the effects of the tide. In course of time most of the waterways between them were dammed up, so that their number became less and less, and only a few of the larger ones retained their separate identity. Dykes were built to protect them from the inundations of the river, and the land could then be used for farming. The alluvial soil (Marsch) of which it consists is exceedingly fertile. The older diluvial formations (Geest) extend to the north and south of the former archipelago, but whereas the southern diluvial ridge, near Harburg, is at a considerable distance from the principal river, the northern ridge is comparatively near and forms a fairly steep gradient towards it.

The municipal section of the State territory contains but a narrow strip (just over half-a-mile wide) of alluvial soil near the mouth of the River Alster, and this explains why no harbour basins, except those on Grosser Grasbrook and Baakenwärder, could be constructed on the northern bank of the Elbe. Further east the northern diluvial ridge recedes beyond the River Bille, a tributary of the Elbe, which rises in the Sachsenwald and forms the north-western boundary of the south-eastern section above referred to. That section consists entirely of alluvial soil and comprises the districts of Billwärder, Billbrook, and Vierlande. In the up-river direction, however, there is not much space for the expansion of the Port of Hamburg, because the nature of the river makes it impossible to provide the necessary depth. Moreover, the exigencies of land traffic demanded the construction of bridges across the Elbe, and once these had been built, the upper limit of the port was irrevocably fixed. This means that no sea-going vessels can proceed beyond the Elbe bridges. The up-river districts adjacent to the harbour area (i.e., Billwärder, Moorfleth and Billbrook on the right, and Veddel and Peute on the left bank) are utilised for the purposes of river navigation and industry. The remainder of the alluvial district still further east, which is accessible to rivercraft by the Dove Elbe and Gose Elbe—two former branches of the main river—forms an exceedingly fertile fruit and vegetable producing district.

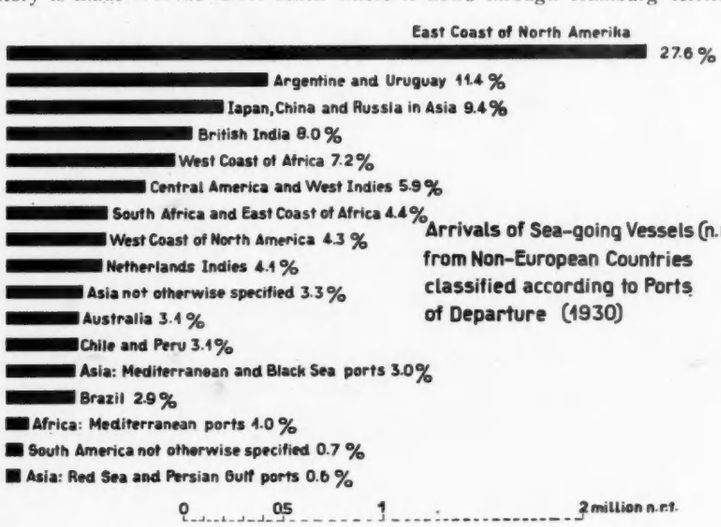
Near and below the mouth of the Alster—where the original harbour was situated—the strip of alluvial soil between the river and the northern diluvial ridge that can be used for shipping purposes is exceedingly narrow. The construction of harbour basins in that part is out of the question. For the same reason Altona, the city adjoining Hamburg in the west, has always had the greatest difficulties in constructing any harbour works at all.

Conditions, however, are quite different on the southern bank of the river where the area of alluvial soil is, by nature, sufficiently large to enable it to be utilised for the purposes of shipping. Up to the conclusion of the interstate agreement between Hamburg and Prussia (in 1929) concerning the establishment of a joint port administration authority development nevertheless had to stop at the interstate boundary line which, on the whole, runs parallel to the river, although in zigzag fashion. Opposite Altona and its riverain suburbs the boundary coincides with the fairway. From all this it follows that the territory (suitable for development as a sea-port) within which Hamburg has full control of both banks of the river is limited to the small section between the Elbe bridges and the Altona boundary, i.e., about three miles.

The Intersection of the Harbour Area by Water Courses.

The division of the area just described into smaller units is brought about (1) by the Elbe and its branches and (2) by the main railway line approaching Hamburg from the south.

About 6¼ miles above Hamburg, near Bunthaus, the Upper Elbe separates into two main channels, i.e., the Northern Elbe (Norderelbe), on which Hamburg is situated, and the Southern Elbe (Süderelbe), which flows past the Prussian city of Harburg-Wilhelmsburg. The Southern Elbe, called Köhlbrand in its lower reach where it flows through Hamburg territory,


East Coast of North Amerika 27.6 %
Argentine and Uruguay 11.4 %
Japan, China and Russia in Asia 9.4 %
British India 8.0 %
West Coast of Africa 7.2 %
Central America and West Indies 5.9 %
South Africa and East Coast of Africa 4.4 %
West Coast of North America 4.3 %
Netherlands Indies 4.1 %
Asia not otherwise specified 3.3 %
Australia 3.1 %
Chile and Peru 3.1 %
Asia: Mediterranean and Black Sea ports 3.0 %
Brazil 2.9 %
Africa: Mediterranean ports 4.0 %
South America not otherwise specified 0.7 %
Asia: Red Sea and Persian Gulf ports 0.6 %
0
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2 million n.r.t.

Arrivals of Sea-going Vessels (n.r.t.) from Non-European Countries classified according to Ports of Departure (1930)

The Port of Hamburg—continued

The Harbour Section between Kohlbrand and Reiherstieg.

rejoins the Northern Elbe opposite Altona, and from that point to the sea the united river is called Lower Elbe (Unterelbe). The Köhlbrand channel cuts right across the left-bank harbour area, and forms at the same time the waterway by which sea-going ships can reach Harburg-Wilhelmsburg. Since the completion of the Köhlbrand improvement schemes the former continuation of the Southern Elbe to its junction with the main river, called Alte Süderelbe, has lost its importance. This latter branch, the main river, and the Köhlbrand enclose between them the island territory of Altenwärder, Finkenwärder, and Waltershof. There is also a minor branch, the Köhlfleth, which separates some of the small islands from one another. A dam has been built right across it under the terms of the 1908 Köhlbrand Agreement, which also provides for a similar dam across the Alte Süderelbe.

The island territory enclosed by the Northern and Southern Elbe measures about 5 miles from east to west and about 4½ miles from north to south. The extent to which it has been developed varies enormously in its different sections. Its northern (Hamburg) section—every square yard of which is turned to useful account—comprises the main part of the Port of Hamburg. The names of the various districts, viz., Peute (above the Elbe bridges), Veddel (flanking the railway line on either side), Kleiner Grasbrook (the eastern shore of the Reiherstieg), Steinwärder (the western shore of the same), Kuhwärder (near the mouth of the Köhlbrand), and Ross-Neuhof (higher up the Köhlbrand), are reminiscent of the time when these parts were exclusively used for farming purposes.

The greater portion of the island belongs to Prussia. It is called Wilhelmsburg and forms part of the municipality of Harburg-Wilhelmsburg. It contains a number of industrial concerns (some of which are of considerable importance), a few harbour installations, and some scattered residential quarters, and has also provided the site for the Wilhelmsburg Shunting Station (Verschiebebahnhof Wilhelmsburg) of the National Railway Company, which regulates, for the present at least, the major part of railway traffic to and from the Port of Hamburg.

Between the shunting station and the Southern Elbe the Reiherstieg channel intersects the island area in the direction from south to north. Its Hamburg portion has been made deep enough to accommodate sea-going vessels, and both of its banks are closely lined with industrial concerns and warehouses.

The district bounded by the Southern Elbe, the Reiherstieg channel and the interstate boundary, which covers some 2,250 acres and the various parts of which are known as Kattwyk, Hohe Schaar and Neuhof respectively, forms the area which is now jointly administered, for harbour purposes, by Hamburg and Prussia, as already mentioned elsewhere.

It contains ample space for the large-scale development of the Hafen Hamburg along the waterway formed by the Southern Elbe. The term just used has been purposely coined in order to make it possible to distinguish between the Port of Hamburg proper (Hamburger Hafen) and the combined ports of Hamburg, Altona and Harburg-Wilhelmsburg, together with The Rethe and the Reiherstieghafen, which con- the jointly administered area (Hafen Hamburg). nect the Köhlbrand with the Reiherstieg, have already been developed for the purposes of sea-going shipping. The transhipment and storage plant of the German Potash Syndicate (Deutsches Kalisyndikat) lines one of the banks of the Reiherstieghafen, whilst some other industrial undertakings have established plants on the banks of the Neuhofer Kanal, which also connects the Köhlbrand with the Reiherstieg, but north of the jointly administered area. The work of developing the latter, more particularly that of linking it up with the existing facilities in the Port of Hamburg, has already been taken in hand.

Sandthorhafen, the Oldest Quay in the Port of Hamburg.

A large area (covering some 12,500 acres) west of the Southern Elbe and the Waltershof portion of the Port of Hamburg will be the first part subjected to future harbour extension; and the two parties to the above-mentioned agreement, i.e., the Governments of Hamburg and Prussia, have bound themselves to reserve it exclusively for this purpose. It consists of the districts of Moorburg, Dradenau and Northern Finkenwärder (belonging to Hamburg) and those of Altenwär-

The Port of Hamburg—continued

der, Southern Finkenwärder, Francop and Neuenfelde (belonging to Prussia), and extends as far as Blankenese. It is about 6 miles long, whilst its greatest width is about 3¼ miles.

The total size of this area, together with that already taken in hand for development, is about 14,750 acres, whilst that of the present Port of Hamburg is about 10,000 acres, a considerable portion of which has not yet been fully developed. There is therefore a practical possibility of increasing the actual size of the latter to about two-and-a-half times its present extent.

The right-bank tributaries of the Elbe within the Hamburg territory, viz., the Alster, Bille, Dove Elbe, and Gose Elbe, are not of very great importance in connection with the harbour, except in that they are the means by which a fairly brisk local traffic is maintained between it and the industrial and agricultural establishments along their courses. Alster and Bille are provided with lock entrances and empty their waters near the edge of the city proper into a belt canal surrounding the harbour on its northern side. The Gose Elbe, too, is provided with a lock where it joins the Dove Elbe, whilst the upper extremities of these two waterways were already banked up by dykes, and therefore separated from the main Elbe, more than four centuries ago.

Nicolaifleth, the mouth of the River Alster. The nucleus of the present Harbour.

The Intersection of the Harbour Area by the Railway Line and the Bridges.

It has already been pointed out that, in addition to the natural and topographical conditions of the harbour area, the railway line intersecting it has affected the development of the Port of Hamburg in several important respects. The Northern Elbe had to be bridged because it became necessary, firstly, to connect the city proper and the harbour basins on the right bank of the Elbe with the national railroad system south of the river, and secondly, to join together the two parts of the harbour area. Once, therefore, the construction of a bridge was resolved upon, the up-river limit of ocean-borne traffic had to be likewise definitely fixed. The problem became acute about the middle of the past century. At that time the only railway connection possessed by Hamburg was the line to Berlin, but it was decided to provide a similar link between the Elbe port and the western part of its hinterland. The authorities fully realised that the choice of the place where the new line was to cross the Elbe would decisively affect the future development of the entire economic area. Three years (from 1854 to 1857) were spent in trying to reconcile the conflicting views concerning the river, the rate policy of the railroads, and the general interests of the latter with the claims of shipping—claims, however, which could not be precisely formulated until at a much later period. A distance of about 4½ miles separated the two extreme points that had to be considered on their respective merits. Finally, a bridge was built (1868-1872) about two miles above the mouths of the Alster and the Reiherstieg channel, and thus the up-stream limit of seaborne traffic was fixed. During the 'eighties of the past century a second bridge was built some 650-ft. higher up the river, and after the war a third bridge was added a little lower down the river than the first, so that the decision originally arrived at has now been confirmed for all times.

In the preceding pages it has been pointed out that a profound influence was brought to bear upon the ultimate configuration of the harbour area by a great variety of factors, viz., the condition of the Elbe and its branches, the site of the city, the position of the diluvial ridge on the right and the course of the Hamburg State boundary on the left bank, the bridges across the river, and the intersection of the whole area by the railway line.

In the description of the general topography of Hamburg it has already been pointed out that the facilities for harbour development on the right bank of the river are very much less satisfactory. Local conditions being what they are, no real harbour works can be constructed above the Elbe bridges, so that the water frontage available for such purpose on that side covers little more than three miles, i.e., the distance between the Elbe bridges and the boundary of Altona.

General Design of the Harbour.

The harbour installations are completely accommodated within a narrow, though compact, area whose length is not out of all proportion to its width. The lines of communication between the harbour and the city, as well as those between the various sections of the former, are as short as they can possibly be in a port of international importance. No part of the harbour is at a greater distance from St. Pauli Landing Stages than just over four miles by the water route, and any point along the extreme circumference may be reached from there in twenty or twenty-five minutes, but in spite of this compactness of design there is sufficient room for the unrestricted development of every single concern domiciled in or connected with the harbour.

The Principle of Harbour Basins cut into the Land.

A second characteristic of the Port of Hamburg is that the loading and discharging berths of the ships are not located alongside of piers projecting far out into the river, but within basins or slips cut into the land. In this respect Hamburg resembles all other ports situated a long way distant from the open sea. The reason why basins had to be cut into the land is that the river is not wide enough to permit an alternative system being adopted. Although the Elbe, between the eastern and western extremities of the port, widens from 738 to 1,870 feet, this width is only just sufficient to provide a safe avenue for the very considerable volume of traffic and enough room for the berths and floating docks on shore. Hence it was necessary to cut slips or basins into the land, and as these, on account of the tides, had to be made very deep, an enormous amount of dredging work was required.

The Principle of Open-Basin Harbours.

Another feature very typical of the Port of Hamburg is that, in contrast with many other sea-ports, access to the harbour basins is in no case rendered difficult by the provision of locks. Hamburg, in fact, has adopted the open-basin type of harbour. Under normal conditions of wind and weather the level of the water, owing to the effects of the tide (which are noticeable far beyond Hamburg), varies twice daily to the extent of 6-ft. 6-in., although the maximum difference between the highest and lowest level so far recorded is about 23-ft. Similar conditions, along with considerations regarding the danger of silting, have caused other sea-ports to adopt the system of closed dock harbours provided with locks. Single locks of the usual type, however, are impractical in that they limit the movements of ships to and from their loading and discharging berths to a few hours every day, whereas the much more expensive chamber locks are liable to the objection that considerable delays and charges are incurred each time a vessel enters or leaves the dock. The paralysing effect of locks upon the quick despatch of vessels is nowhere more pronounced than in a port where, as is the case in Hamburg, ocean-borne shipping and river navigation join hands and where most of the local harbour traffic also uses the water route. The Port of Hamburg could never have satisfied modern requirements if the movement of the hundreds of sea-going vessels, small steamers, barges, lighters, tugboats, and launches that cross it daily in every direction were continually hampered by waits at the lock gates and within the locks.

The provision of unrestricted access, at all times of day, to any part of the harbour, is a very great advantage, and is appreciated by vessels of every description.

General Features of the Harbour Basins.

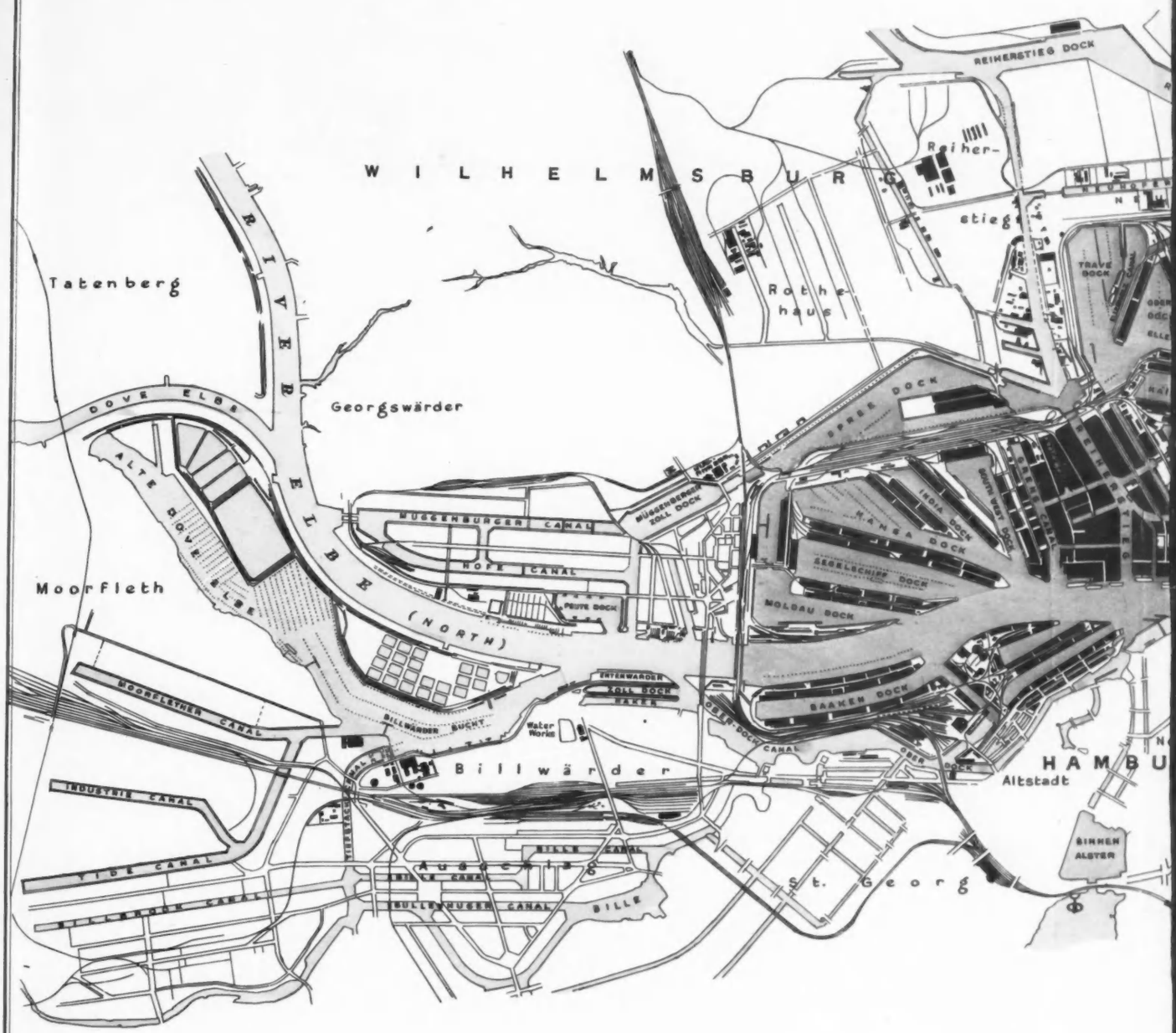
Another great advantage resulting from the absence of locks is that those responsible for the development of the Port of Hamburg were at liberty to design the basins and to utilise the available space without being handicapped by irrelevant considerations. It is essential that vessels, upon entering a harbour basin, should have to deviate as little as possible from the course maintained during their passage up the river, and that the tide

(continued on page 313)

PORT OF HAMBURG.

UNDER THE JURISDICTION OF THE DEPUTATION FÜR HANDEL, SCHIFFAHRT UND GEWERBE

(BOARD FOR TRADE, SHIPPING AND INDUSTRY), HAMBURG.



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1 METRE = 3·28

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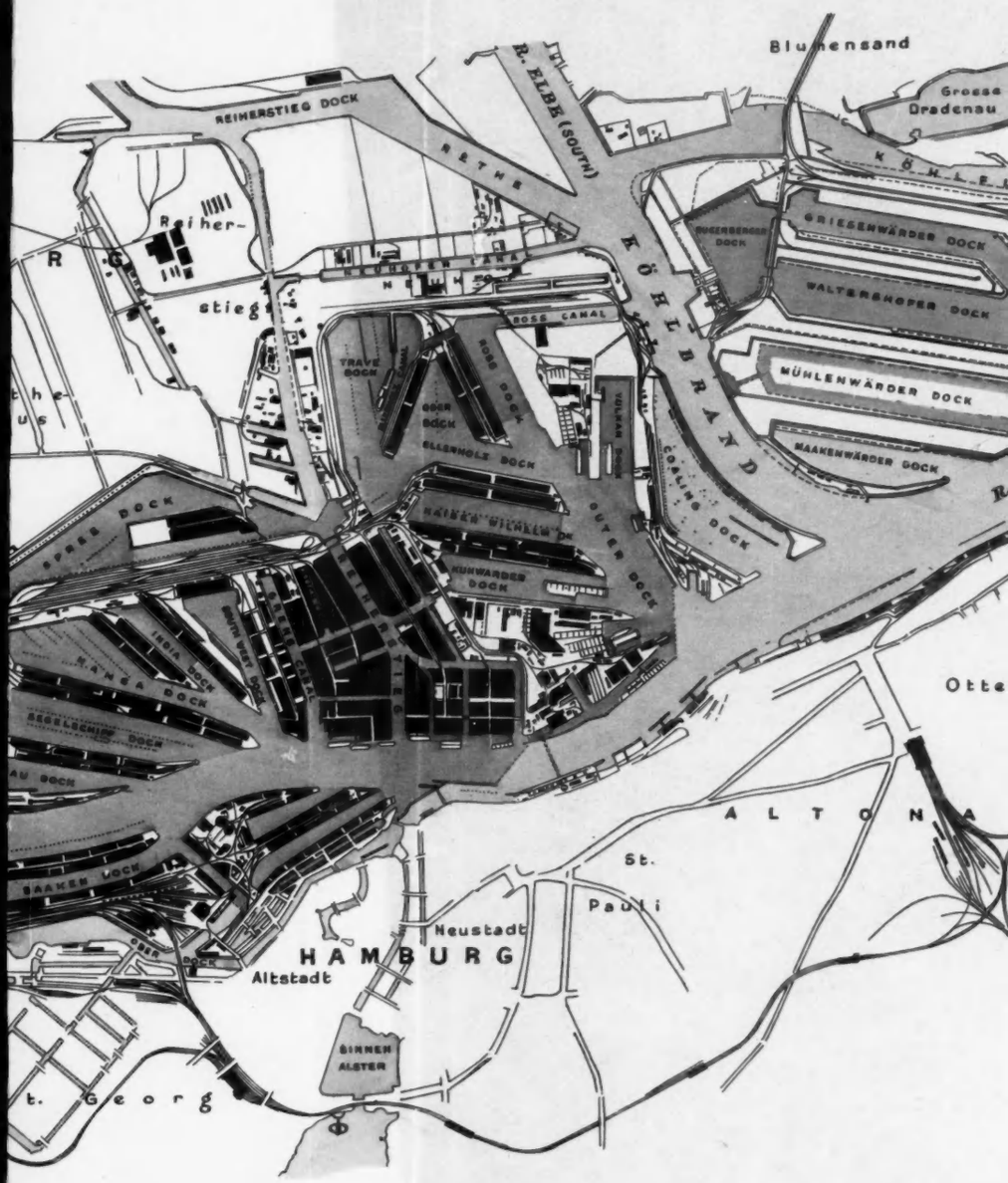

Scale of Metres.

METRES 1000 500 0 1000 2000 3000 METRES

1 METRE = 3·28 FEET

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T. 1932.

Finkenwärder
Neas
Grosse Dradenau
Kleine Dradenau
RIVER ELBE
PETROLEUM DOCK
PARK DOCK
Klein-
Othmarschen
Flottbeck
Ottensen

PORT OF HAMBURG.

Hull and the Humber

The Humber Bridge.

THE Commercial and Shipping interests who believe that the construction of a road bridge over the Humber between Hull and North Lincolnshire, would be a serious menace to navigation and to the ports of Hull and Goole, are continuing active opposition to the Bill promoted by the Hull Corporation. In view of the fact that a recent poll of the inhabitants resulted in a majority adverse to the revised proposals for financing the projects by the issue of £2,000,000 capital in 5 per cent. debentures, the Corporation to guarantee any deficit there might be in the amount collected from tolls, the promoters and the other local authorities supporting them were strongly pressed to abandon the Bill, which in its original form has already been given second reading and been before the Committees of both Houses of Parliament. This, however, the Corporation have declined to do and despite objections the Bill continues in existence. In the House of Commons a few days ago, a motion in the name of the Chairman of Ways and Means (Sir Dennis Herbert) was carried providing for the suspension of further proceedings in connection with the Bill and the carrying of it over to the next session of Parliament providing the necessary formalities are complied with.

The contention of the Humber Conservancy Commissioners, who are charged with the maintenance of the River Humber, is that the Government having withdrawn the offer to constitute 75 per cent. of the estimated cost of the proposed bridge, the main essential of the Bill has been changed and that it differs from the shape it had when the House of Commons approved the preamble of the Bill containing this provision. What, however, the Humber Conservancy Commissioners are greatly concerned about is the suggestion that an extensive scheme of training walls should be undertaken by the Conservancy to go hand in hand with the construction of a bridge if a bridge is built. Before the House of Commons Committee, three engineers, without any practical experience of the Humber, were called on behalf of the Hull Corporation. As against this, eleven, many of whom had had life-long experience of the Humber and whose knowledge and access to facts clearly entitles them to speak with authority, gave evidence on behalf of the opponents to the effect that it would be a hazardous proceeding and a grave danger to the channels of the river to erect the proposed bridge. After hearing this evidence the committee, it is pointed out by the Conservancy, clearly decided that the danger existed, and the chairman stated on their behalf: " The question of training walls has exercised the minds of the committee very considerably; we feel very strongly that the construction of training walls should go hand in hand with the construction of a bridge, if a bridge is built. The view we express is that the construction of training walls, in our opinion, becomes essential and that their construction should go on side by side with the construction of the bridge."

Notwithstanding these statements the Corporation are making no provision whatever for such training walls, the construction of which would occupy many years and would cost considerably more than the bridge. The money for these training walls would have to be found by the ratepayers of Hull or would fall on the shipping using the port, in the form of river dues, thus raising the charges to an utterly prohibitive level. It may be added that the Humber Conservancy had prepared before the war an ambitious scheme of training walls both above and below Hull with the object of improving the flow of the river, but owing to the great cost it would entail to carry it out, only comparatively small sections have been done, namely in the vicinity of Hull and again at the confluence of the Trent and the Ouse where they join and flow into the Humber Estuary. This latter, is now in hand and is being undertaken in conjunction with the Aire and Calder Navigation, the Conservancy making a contribution of £75,000 towards the cost. To complete the scheme above and in the vicinity of the proposed bridge would involve an expenditure of probably £2,000,000 sterling which would have to be raised solely from the shipping dues unless financial assistance were forthcoming from the Government and other sources. The Shipping and Commercial interests who are anxious to keep the river and other dues as low as possible in order to attract trade, of course, look with disfavour upon increased charges as detrimental to the best interests of the port.

Decrease in Trade on the Humber during the Past Half-year

During the past half-year there was much reduced activity at Hull and the sister ports on the Humber. In practically all sections and all directions there was marked falling off, the trade with the ports in Northern Europe in particular being seriously diminished. The import trade in grain, oilseeds, timber and provisions was perhaps not so greatly affected, though under all the principal heads quantities were less than in the corresponding period of last year. The arrivals of wheat and kindred cereals at 531,570 tons were 45,757 tons down, and oilseeds, oil nuts and kernels at 316,050 tons, showed a decline of 35,265 tons. The imports of timber were 235,500 loads, a decrease of 25,295 loads due solely to the smaller imports of pitwood.

On the export side there was a good increase in the quantity of vegetable oils sent abroad, but manufactures and general merchandise showed a considerable shrinkage, as also did coal, all ports on the Humber being affected, more or less.

The coal export trade for the convenience of which up-to-date appliances and extensive facilities have been provided passed through a very lean period. The total of exports (foreign), for the Humber ports (including Boston and Lynn) during the half-year, were only 1,834,708 tons or 436,958 tons less than in the corresponding half of last year, and 1,186,853 tons below the total for the January-June period of 1930. The falling off is due in the main to the drastic import regulations in France, Germany and other countries on the Continent, and in some measure also to the handicaps Yorkshire coal is under by reason of the high rail charges consequent on the long haul from the colliery area to the ports.

The lessened volume of goods carried to and from the Humber ports is being viewed with serious alarm by the railways which already badly hit by the competition of road transport are now deprived of a further slice of their traffic. The London and North-Eastern Railway own the docks at Hull, Grimsby and Immingham, and the London, Midland and Scottish together with the Aire and Calder Navigation those at Goole.

Further Reductions in Charges at Hull.

It will be of interest to shipowners generally that further substantial reductions have been made in the tariff for discharged cargo by the principal stevedoring firms, thus giving added emphasis of the claims of Hull to be a "cheap" port. Of equal importance is the change which has been made giving shipowners full freedom to make their arrangements direct with any stevedore they may choose in lieu of the former practice whereby a stevedore was allocated to a broker or agent. This principle prevented competition among the stevedoring firms and, it is claimed, the maintenance of a high level of rates. Two independent firms have now entered the field, the result of their action being, as first stated, a reduction in the tariff.

The Filling-in of the Old Queen's Dock at Hull.

The filling-in of the old Queen's Dock at Hull, the oldest in the United Kingdom, is proceeding apace, and what was once ten acres of water space, and hundreds of yards of quay, and a scene of great shipping activity will soon be transformed into a handsome boulevard, flanked by broad streets and imposing buildings. The lock-pits at either end have now been bridged over and two temporary roads constructed at other points. The effect of all this is to destroy for ever what had been a unique feature for the past 100 years or more, namely, the old town cut off from the rest of the city by a belt of docks stretching from the River Hull or Old Harbour in the east to the Humber in the west. Meanwhile the provision of additional dock space to compensate for the loss of the Queen's Dock and to provide for an expansion of trade remains in abeyance. The directors of the London and North-Eastern Railway, who own the docks, confess that they have not the money to expend on the extension of the King George Docks as has been suggested should be done to bring its water area up to 85 acres.

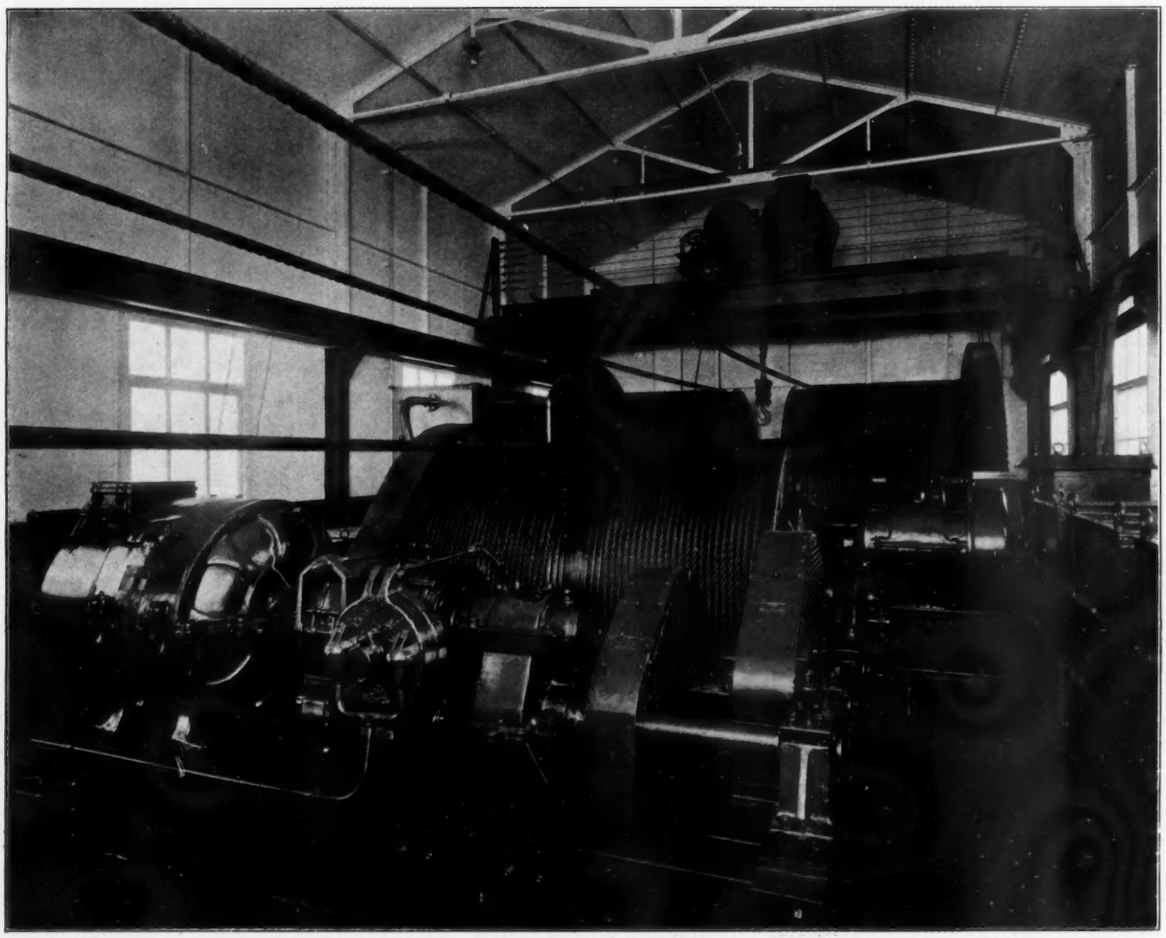
Grain Bookings through Churchill, Manitoba

Grain bookings to Europe via Churchill, Manitoba, promise to reach a substantial total during the first year of the port's commercial operation, and at least one incoming general freight cargo is assured. Ice has been breaking up in Hudson Bay, and there is stated to be some prospect of an early shipping season.

The order of the Continental Grain Co., of New York, for 2,000,000 bushels of wheat for shipment to Europe, has been followed by one for 280,000 bushels from the large French concern, Louis Dreyfus and Co., Ltd., of Paris, and a further order for 1,000,000 bushels has been placed by an International grain dealer, whose name has not yet been made public. With bookings already in excess of 3,000,000 bushels, the new route will undergo a thorough trial during its first year of commercial operation.

175-ton Electric Cantilever Crane at Glasgow Harbour

General View of the Crane. Photo W. Ralston, Glasgow



The Machinery House, showing the Main and Auxiliary Hoisting Gear. Photo W. Ralston, Glasgow

175-ton Electric Cantilever Crane at Glasgow Harbour

THE Trustees of the Clyde Navigation have recently added to their equipment at Glasgow Harbour a cantilever fitting-out crane, which has been installed to replace two steam cranes now found to be lacking in height of lift and the out-reach required for placing machinery in modern vessels.

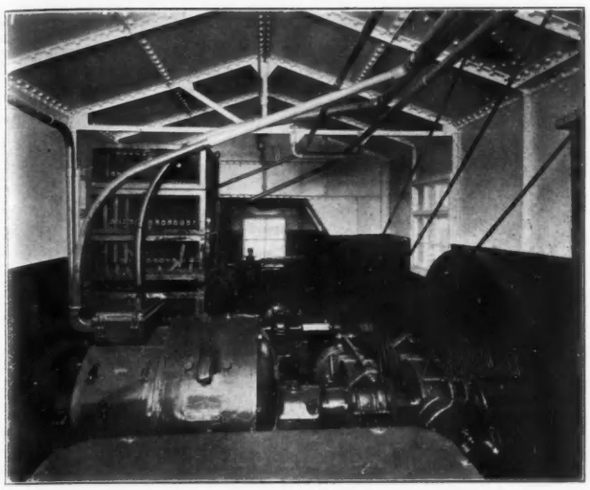


Photo W. Ralston. Glasgow

Slewing and Jigger Hoist Gear.

The crane has been constructed by Messrs. Cowans, Sheldon and Co., Ltd., to the specification and under the supervision of Mr. Daniel Fife, M.I.Mech.E., Mechanical Engineer to the Trustees. It has a maximum lifting capacity of 175 tons at 85 feet radius and 80 tons at 144 feet radius. An auxiliary hoist is provided capable of dealing with loads up to 30 tons, and a jigger hoist for handling light loads of 5 tons at high speeds is also fitted.

The foundations for the structure consist of steel caissons sunk under compressed air to a depth of 50 feet below cope of quay. The caissons under the back legs are 20 feet in diameter and those at front 30 feet by 10 feet. The front legs are also partly supported by the old quay wall, and the total load which may occur on one leg under maximum loading conditions amounts to 570 tons. The legs of main tower are 45 feet apart and are of the double " L" section, which allows of efficient connections for the bracing and the beams at top, which carry the roller path and centre girders.

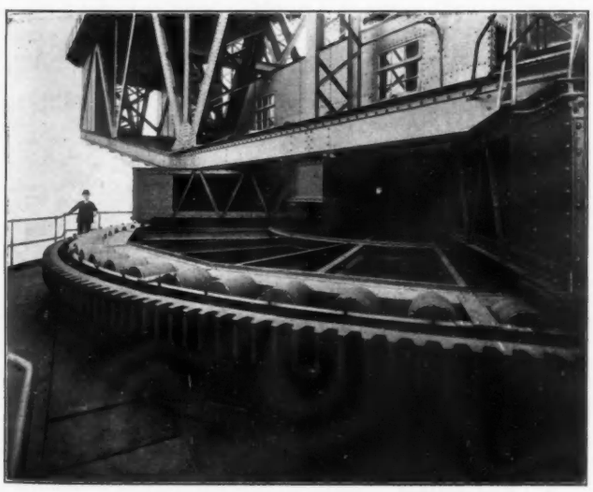


Photo W. Ralston. Glasgow

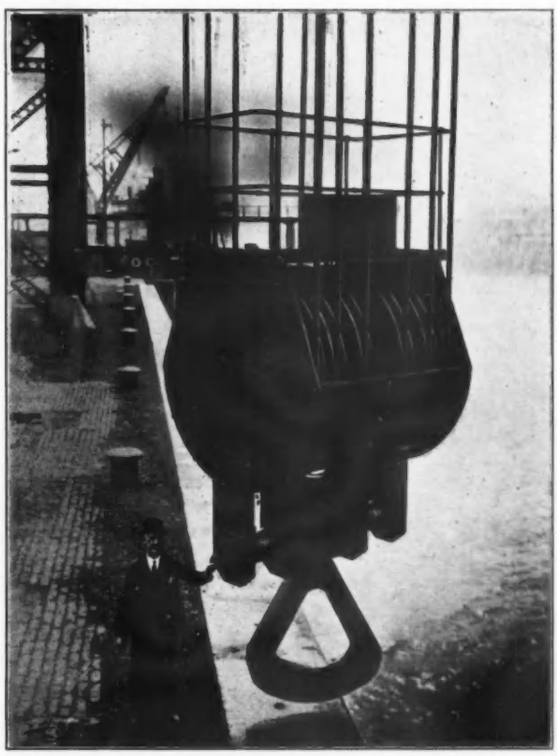
The Slewing Rack and Roller Path.

The centre pin is supported at top and bottom by large cast steel brackets which have spigots recessed into the beams to take the shear off the bolts. The hole in plating for the spigot and the full area of flanges was machined on site after the riveting of the tower and beams was completed, thus assuring accurate alignment. The pin is housed in the top and bottom brackets and drawn tight by a large nut on bottom, thereby adding to the strength of the structure and increasing the bearing on which the cantilever is centred. The method of adjusting the top collar is unique for this type of crane, in that, although the pin has a solid head, liners can be fitted between the loose collar and the head of pin, and thereafter secured by the screwed bolts which are tapped into the collar.

The lower roller path has a mean diameter of 45 feet and consists of cast steel plates 4-in. thick, which are truly machined and bolted to a circular girder, which is constructed of rolled beams 15-in. by 6-in. by $\frac{3}{8}$-in. web, with a top plate $\frac{7}{8}$-in. thick, which is also machined. Machined plates of a thickness ascertained after the girder and pathway were fitted in place and aligned from the centre pin are fitted below the girder and securely bolted in position. The rollers (80 in number) are made of specially hard cast steel, each 13.646 inches in mean diameter by 14 inches long.

The spider for carrying the rollers is of massive construction and has provisions for taking the end thrust of the rollers by bronze liners fitted to the outer ring. Each roller is efficiently lubricated by grease under pressure. The top roller pathway is of similar construction to the bottom pathway and embraces 104 degrees of the full diameter at back and front.

The main cantilever has a maximum length of 253-ft. 6-in. by 30-ft. deep at centre. It consists of two braced girders placed 18-ft. apart, connected at ends by box girders, and at intervals by diagonal bracing.



Main Hoisting Block.

All plating of the tower and cantilever is $\frac{3}{8}$-in. thick and over, and all angles and sections are not less than $2\frac{1}{2}$-in. by $2\frac{1}{2}$-in. by same thickness. Ballast boxes constructed of steel plates $\frac{3}{8}$-in. thick are formed at the rear end of the cantilever and the ballast consists of 130 tons of concrete blocks, which were pre-cast to suit the spaces.

Platforms are provided for access to all parts of the structure, including the bottom of centre pin, also stairways from ground level to top of cantilever.

A passenger hoist capable of handling loads up to 10 cwts. is also provided on the tower. The hoist has a clear lift of 117-ft. at a speed of 130-ft. per minute.

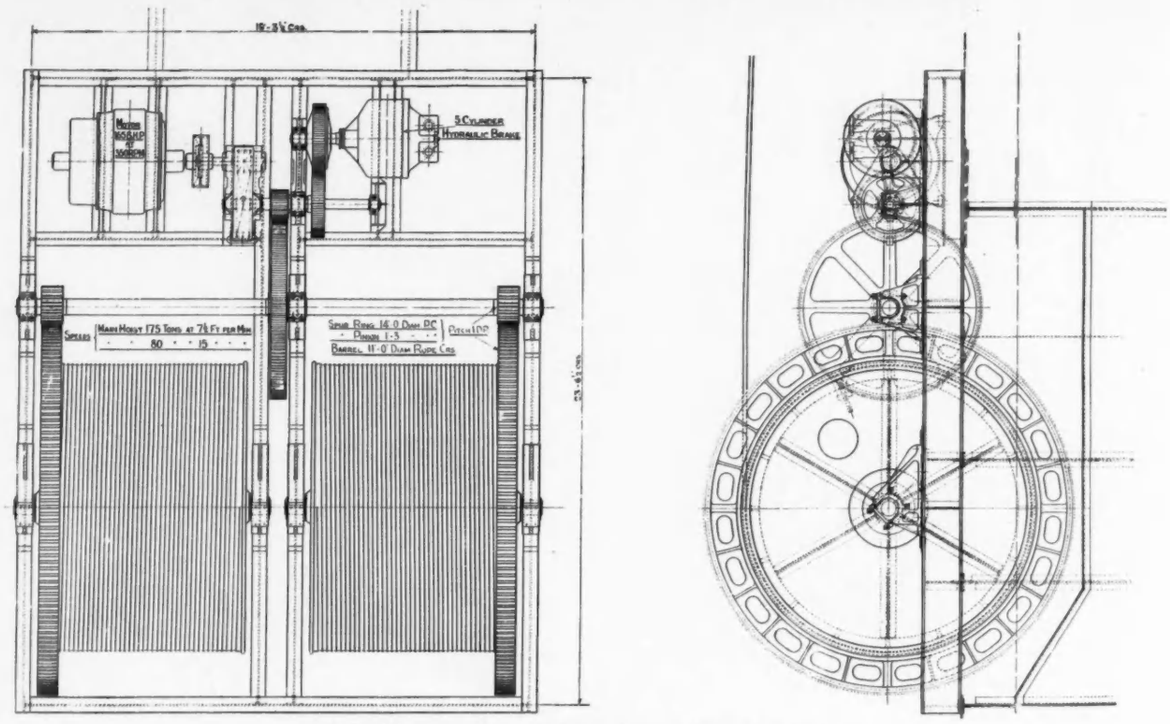
The cage is operated by push-button control, and all the necessary safety features are fitted, which includes governor and double gates.

The main crab carrying the 175-ton and 30-ton purchases is supported on four compensating bogies, each having four wheels, eight of which are driven by a motor of 50 b.h.p.

The main purchase block is of massive construction, the load being carried by 12 parts of wire rope $5\frac{3}{4}$-in. in circumference.

The main pulleys are 4-ft. 9-in. in diameter at bottom of groove and the bearings are lubricated by a twin pump fitted on a platform attached to top of the block. This platform has been found very useful when the ropes require to be greased. The bearings for the pulleys on the crab for the main and auxiliary

175-ton Electric Cantilever Crane at Glasgow Harbour—continued

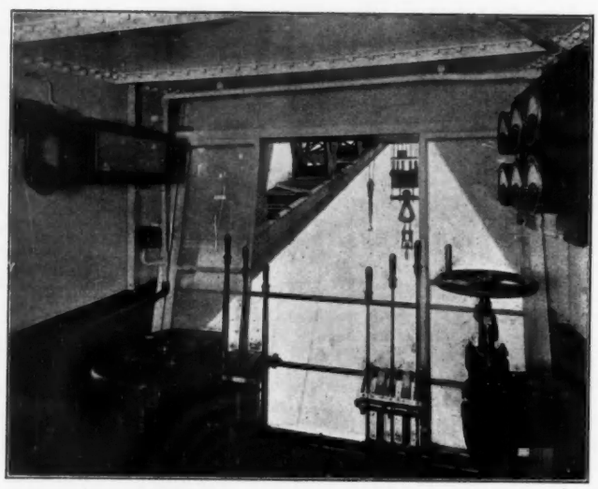


Main Hoisting Gear, 175-ton Crane, Stobcross Quay.

lifts are also lubricated by pumps; in both cases the pumps are driven by chains which are actuated by steel pitch wheels fixed to pulleys.

Compensating pulleys are provided at the outer end of the cantilever, and ball bearing swivels are fitted so as to allow the ends of ropes to revolve, thus preventing the bunching of ropes, which frequently occurs on this type of crane.

The jigger hoist has a longitudinal travel of 110-ft., the crab being supported by a track formed of double channels, which are fixed on the inside of the main cantilever and is level for the full length.



Driver's Cabin: Looking towards Outer End of Cantilever.

The machinery houses, including the driver's cabin, are substantially framed and clad with steel plates (galvanised) $\frac{3}{16}$-in. thick.

An overhead electric travelling crane of a maximum lifting capacity of 3 tons is fitted in the main machinery house, which is capable of lifting any of the parts of the machinery, with the exception of the main hoisting barrels, and depositing them at the ground level.

A travelling gantry with 3-ton purchase block is provided on top of main cantilever, which is capable of lifting any parts of the machinery on the crabs and in the slewing gear house. A bogie is also provided for transporting any material lifted by the gantry to within reach of the 3-ton overhead crane in machinery house, through weather-tight doors.

The main lift is operated by a series wound motor of 165 b.h.p., which at full load revolves at 350 r.p.m. and at half-load can, if required, attain a speed of 700 r.p.m. The two main barrels, each of which is 11-ft. in diameter by 7-ft. long, are driven through a train of cast steel wheels, the teeth of which are machine cut and of the " stub " form.

An electrically operated brake is fitted to the motor extension shaft and the pinion on this shaft, including all other first motions of the lifting and slewing gears, are solid with the shafts. An oil brake is also provided on this gear for lowering heavy loads.

The brake consists of a five ram Hele-Shaw Pump, the casing of which is of cast steel and all internal parts of bronze.

The crank shaft of the pump is attached to the main gear when lowering through a ratchet wheel, and the lowering speed is controlled by a by-pass valve placed in the driver's cabin.

The speed of lowering under test, with a suspended load of 175 tons, was found to be from 9½-ft. per minute to a minimum of 3-in. per minute, over which range the load descended without any irregularity in speed, as is observable when oil brakes are used, which have a less number of rams.

The 30-ton auxiliary hoist is operated by a series wound motor of 65 b.h.p., which on full load revolves at 400 r.p.m., and at any load under half the speed may be increased to 800 r.p.m., thus avoiding the use of change-speed gears, which, being difficult to manipulate, are therefore infrequently used by the driver.

The load is sustained by a series, also by a shunt solenoid brake, of Igranic Electric Company's make, the former being made to set slightly in advance of the latter. By this arrangement smooth control is obtained when hoisting or lowering, and in the event of one brake failing to act the other is capable of sustaining the full load.

The jigger hoist is driven by a series wound motor of 50 b.h.p. and the racking by a series motor of 18 b.h.p., both of which revolve at 400 r.p.m. on full load.

The details of speed regulation and brakes are similar to that provided for the 30-ton auxiliary hoist.

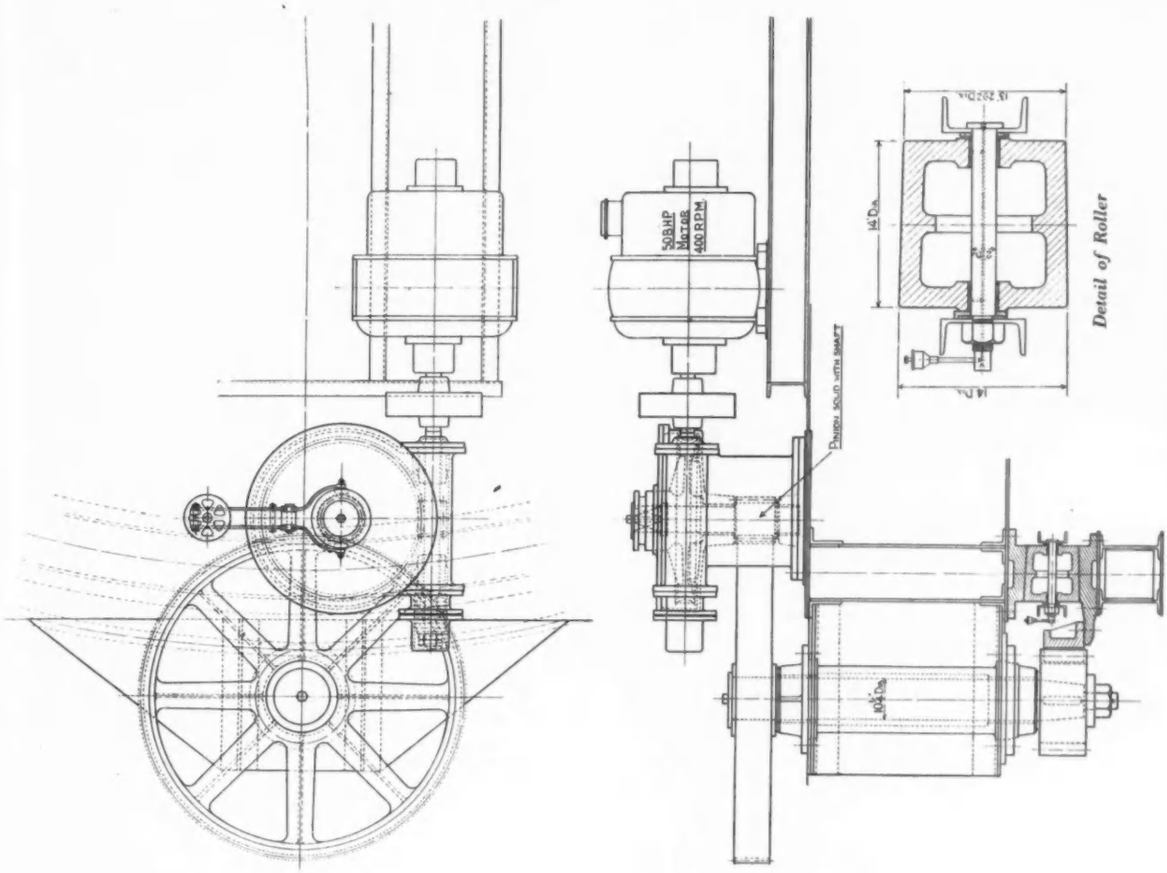
The slewing of the main cantilever is operated by a series wound motor of 50 b.h.p. at 400 r.p.m. through worm and spur gearing. The main rack, which is of cast steel and bolted to the roller path, is 48-ft. 4-in. pitch diameter, and the teeth are 5¾-in. pitch by 10-in. deep.

From the photograph of the driver's cabin it will be observed that the driver has a clear view of all the hoists and the traverse of the main and jigger trolleys. The front windows are of polished plate glass and, being placed at an angle, allow the levers which operate the controller to be located in a position as enables the driver to have in sight the whole of the quay space from bottom of tower outwards.

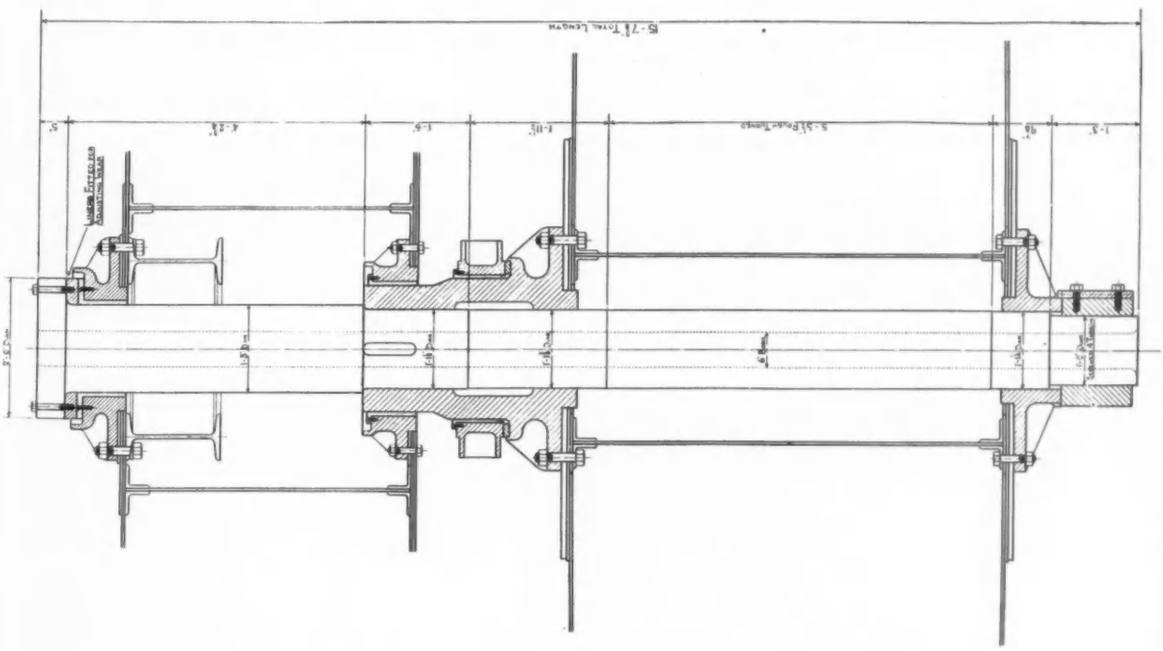
This photograph also shows the control valve of the oil brake, the indicator for showing position of main trolley and the loud speaker by which orders may be conveyed to the driver from the deck of a ship berthed alongside the crane by a transmitter and flexible cable attached to a plug at base of tower.

The motors, which are of Messrs. Laurence, Scott and Electromotors, Ltd.'s manufacture, are liberally rated and of special

175-ton Electric Cantilever Crane at Glasgow Harbour



Slewing Gear, 175-ton Crane, Stobcross Quay



Centre Pin, 175-ton Crane, Stobcross Quay

175-ton Electric Cantilever Crane at Glasgow Harbour—continued

construction; the yokes, end bearings, armature spiders and other parts subject to stresses are made of cast or forged steel. Asbestos insulation is used throughout for the armature, field and interpole coils.

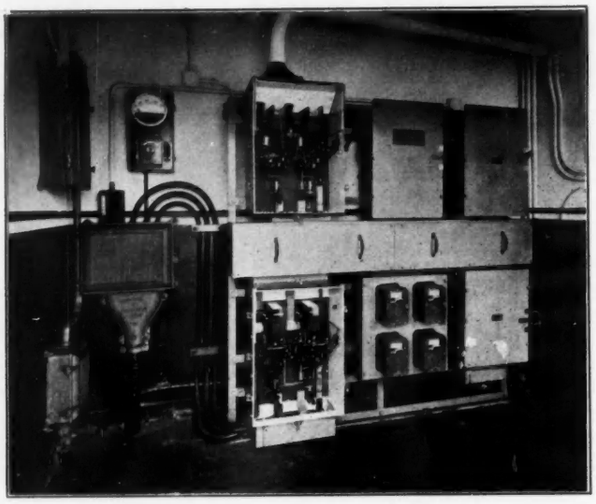


Photo W. Ralston, Glasgow

Interior of Switch House at Base of Tower

The main switchboard on crane and all the controllers were supplied by Messrs. Igranic Electric Co., Ltd., the main and auxiliary hoists being operated by master controllers and automatic contactors with relays. Automatic double pole overload contactors are provided in the circuits of all motors.

The electrical energy for operating the crane is obtained from the Glasgow Corporation's alternating current mains at a pressure of 6,500 volts, and through a transformer supplies a mercury art rectifier of the Hewittic Electric Co., Ltd.'s manufacture, which is installed in a sub-station close to the crane.

The rectifier has an output of 150 kilowatts at 500-250 volts direct current, and the supply to the crane is controlled by double pole re-setting circuit-breakers. The starting and stopping of the rectifier is under the control of the crane driver by push-button switches, which are fitted at top and bottom of the tower.

The temperatures of the switch and machinery houses, also the driver's cabin, are controlled by " Unity " tubular electric heaters.

Provision is also made in the crane switch-house for supplying direct or alternating current at 500-250 volts to ships, when being fitted out, and watt meters are installed for registering the current taken.

A system of lighting the deck of vessels by four lanterns is also provided, each being fitted with one 500 watt lamp; the lanterns are capable of being raised or lowered to suit the height of the vessel occupying the berth.

All the lifting gear was subjected to tests by loads of 25 per cent. in excess of the working loads, and put through all motions with satisfactory results.

Speeds tests with full and half working loads were also carried out, the results of which are as given in table herewith:—

Motion		Load Tons	Radius Ft.	Electrical Horse Power	Speed ft. per min.	Speed specified ft. per min.
Main Hoist	Hoisting	175	85	149	8.13	7.5
	"	80	144	132	14.36	14
	Lowering	175	85	Oil Brake	9.52	
	"	80	144	"	13.1	
Auxiliary Hoist	Hoisting	30	148	72	20.19	20
	"	15	148	61	40.6	40
	Lowering	30	148	4.8	35.5	
	"	15	148	24.9	44.7	
Jigger Hoist	Hoisting	5	—	51.5	100	75
	"	2.5	—	46	156	130
	Lowering	5	—	0	321	150
	"	2.5	—	7	283	150
Slewing Main Cantilever		175	85	44.5	One rev. in 4 M. 20 S.	One rev. in 8 minutes
		80	144	48	One rev. in 4 M. 20 S.	One rev. in 5 minutes
		30	148	33	One rev. in 3 M. 28 S.	
		6.25	—	37.6	One rev. in 2 M. 27 S.	
Racking		175	—	56	53.7	50
		30	—	33.5	58.5	
Deflection of Cantilever		100	144	Dip at outer end	4.5	6 in.	9 in. combine
				Rise at rear end	1.5	

The Baltic and International Maritime Conference

At an Executive Committee Meeting held at Bremerhaven on the 6th June, consideration was *inter alia* given to certain schemes for the alleviation of the difficulties with which international shipping is confronted at present.

Reference was made to the Scrapping Scheme which is being considered by the German Government. The object of this scheme is to scrap a considerable number of old vessels without any obligation of replacement. The German Government has in principle agreed to pay the owners of such tonnage a certain compensation, but the definite figures are still the subject of discussion between the Government and the Verband Deutscher Reeder.

The Executive Committee viewed this scheme with much sympathy, as it felt that the elimination of tonnage which ought to be scrapped might do much towards solving the present difficulties. The sooner world tonnage is reduced, the sooner balance will be established between supply and demand.

It was realised that an effective scrapping scheme would necessitate financial assistance from the various Governments, but that such financial assistance might not be obtainable, because most Governments are at present finding it difficult enough to balance their budgets. The suggestion was therefore made that the necessary funds should be provided by means of a special tax on all vessels, both national and foreign, calling at the ports of the interested countries, on a similar basis as the so-called Maritime Traffic Tax levied in Spain and the anchorage dues levied in Italy. This was generally considered to be a satisfactory solution and that owners would be prepared to pay such dues, if used only for the intended purpose. Whereas taxes used for the purpose of subsidising shipping have increased the number of ships and thereby intensified the evil, the proposed tax when used for scrapping tonnage would diminish it. If this were passed by law, the fund could become immediately available and if dues could be spread over a period of, say, three years, the charge would be small in the case of each individual vessel. At the same time it would be an inducement to the Governments to adopt the scheme that they would save a certain amount of payments to unemployed, as the scrapping could be undertaken by shipbuilding yards at present idle.

The Executive Committee decided that the National Shipowners' Associations should be approached and in accordance with this decision the Associations have been requested to investigate whether in principle their members and their Government would be prepared to support a scrapping scheme on the lines suggested.

In case the feeling is in favour of the scheme it is the intention to arrange a meeting of representatives from the interested countries to work out the further details of the scheme.

Cargo Shipments from Churchill, Manitoba

The Montreal agents of the Dalgleish Shipping Company, Limited, announce that the Company named is arranging to accept shipments for Churchill from Antwerp and Liverpool during the first half of July. An 8,000-ton vessel will be placed on the Hudson Bay route—either the ss. " Pennyworth " or the ss. " Isleworth." Grain will be loaded at Churchill for the eastbound return voyage. The Dalgleish line inaugurated grain shipments from Churchill last September, when the ss. " Farnworth " and ss. " Warkworth " brought out 540,000 bushels.

Messrs. Thomas Harling and Son, of Montreal, agents for the Company named, intimate that every effort is being made to interest exporters on both sides of the Atlantic, and that rates for the transportation of cargo from Antwerp and Liverpool to Churchill would be sufficiently low to provide satisfactory competition with existing rates via the St. Lawrence and Great Lakes Waterway.

Notes from the North

Dock Board Returns.

STATISTICS furnished by the Mersey Docks and Harbour Board covering the year ending 1st July, revealed the extent of the falling off in the trade of the Mersey Port. During the year there are recorded as paying dock tonnage rates 3,591 vessels of 11,881,054 tons in the foreign trade and 9,464 vessels of 2,605,249 tons in the coastwise trade. This showed a decrease of 96 vessels and 663,385 tons (foreign) and an increase of 444 vessels and 27,124 tons (coastwise). The total in this section was 13,055 vessels of 14,486,303 tons, a decrease compared with the previous year of 636,261 tons.

Harbour rates were paid by 1,600 foreign vessels of 3,177,441 tons (a decrease of 55,763 tons), and coastwise 4,708 vessels of 1,416,984 tons (a decrease of 70,476 tons). The grand total in both categories showed that there used the port during the year 19,363 vessels of 19,080,728 tons, a decrease of 368 vessels and 762,500 tons. This tonnage represents the total net register tonnage of vessels paying rates to the Board, inwards or outwards, as the case may be. To arrive at the total tonnage which entered and the total tonnage which left the River Mersey, it is necessary to double the figures. The approximate total tonnage inwards and outwards for the year just ended would, therefore, be 38,161,456 tons. The weight of goods discharged and/or loaded in the Mersey Docks during the year was approximately 13,200,000 tons.

Allowing for the smaller arrivals and departures, the decline of revenue (£21,115) is not serious. The rates received on vessels included the following:—dock tonnage rates, foreign, £1,253,822 (a decline of £51,987 compared with the previous year), and coastwise £81,521 (increase £1,383); harbour rates only, foreign, £45,079 (decrease £1,495); coastwise, £7,285 (decrease £450), so that the total fall in tonnage and harbour rates was £52,550. Other receipts on vessels were:—Graving dock rates, £37,860 (decrease £264); dock rent, £23,555 (decrease £1,564). The rates and dues received on goods were:—dock rates, foreign inward, £483,133 (increase £24,624); foreign outward, £71,806 (decrease £6,690); coastwise inward, £63 (decrease £2), a total of dock rates of £555,003 (increase of £17,932). In town dues the receipts were:—foreign inward, £329,538 (increase £16,837); foreign outward, £76,373 (decrease £7,539); coastwise, £23,582 (increase £1,033), a total of town dues of £429,493 (increase £10,331). The total rates received on vessels was £1,449,125 (a decrease of £54,379) and on goods £984,497 (an increase of £28,263).

The grand total of receipts from all sources amounted to £2,433,622, which shows a decrease compared with the previous year of £26,116. These figures include the receipts on conservancy account amounting to £237,382, a decrease of £9,580 on the previous year's receipts. It is stated in the Board's report that since April, 1929, outward coastwise town dues have not been charged on goods exported coastwise.

Harbour Master's Retirement.

Harbour Master Captain A. P. Hurst, who has been in the service of the Mersey Docks and Harbour Board for 31 years, has retired and is succeeded by Captain Thomas Atkinson. At a recent meeting of the Dock Board, Mr. T. Rome said that Capt. Hurst had been harbour master for the last six years. During that time he had earned the respect and confidence of the Docks and Quays Committee and of the Board to the fullest extent. He had dealt with the difficulties which had arisen in his department in such a tactful manner that he was most popular with all the clients of the Board. Capt. Hurst has been presented with a grandmother clock as a token of the regard and good wishes of his staff and colleagues. Tributes were paid to his qualities by Mr. L. Leighton (principal assistant engineer) and Colonel Ainley (assistant traffic manager).

Record Turn-round.

The Mersey Port Stevedoring Company were responsible recently for another record turn-round at Liverpool in connection with the discharge of the steamer "Dalhanna," which arrived in the Huskisson Dock from the River Plate with a cargo of 7,800 tons of miscellaneous cargo from Rosario. This large quantity was completely discharged in 27 working hours, the normal time for discharging a similar quantity being from between nine to ten days.

Birkenhead Ferries Undertaking.

There is a surplus of £15,399 on the past year's working of the Birkenhead Ferries undertaking. It has been decided that the amount of the surplus over and above the sum of £12,425 already allocated to rates, should also be transferred in aid of rates, save a balance of £312 to be carried forward to the current year. This has been agreed on the understanding that the additional amount transferred is ear-marked as a rate aid from ferries account in respect of the current financial year.

Fleetwood Dock Works.

Fleetwood Council having applied for a charter of incorporation, a Ministry of Health Enquiry was held in the town recently. Several well-known persons, directly connected with the local fishing industry, were the principal witnesses in support of the application.

Mr. John Wood, goods and dock superintendent for the L.M. & S. Railway Company, said Fleetwood was the principal fishing port on their system, being, in fact, the main port for the trawling industry on the West Coast. As recently as 1931 they sought and obtained Parliamentary powers to construct a new dock for general purposes, the primary object, however, being to cater for the growing trawler industry and to place Fleetwood in the position of possessing unsurpassed accommodation for that industry to develop in the future. The fact that they so recently sought the power named should clearly indicate the views of the railway company as to the possibilities of Fleetwood's main industry, while the number of trawlers might be less, their catching power was far greater, as the vessels were bigger.

Representation on Dock Board.

Various Liverpool trades have from time to time put forward pleas for representation on the Mersey Docks and Harbour Board. These were reiterated at the annual meeting of the Liverpool District Association of Chartered Shipbrokers by Mr. Norman McCallum, who suggested certain other ways by which an extension of the Board's enterprise would help. When vessels called at Liverpool with part cargoes, the present regulation was that when the cargo did not exceed 10 per cent. of the vessel's net register tonnage they were entitled to preferential dues. That was all to the good, but the limit of 10 per cent. on the net register tonnage was so low as to make the concession of negligible value. It would be a boon to shipowners using the port, if the board could see its way to allow a substantial increase in the percentage referred to. Liverpool should be made a real bunkering port by provision of up-to-date facilities for quick turns and despatch which were now lacking, with the result that vessels would conceivably be attracted here for bunkers alone. Moreover, if vessels after discharging here could bunker without delay, there would be no inducement for them to proceed to other ports for coaling.

In support of the claim for direct representation on the Dock Board, Mr. McCallum said their claim was not an idle one. When an estimate was made some years ago it appeared that non-Liverpool-owned vessels represented when here by one or other members of the institute, as ships' agents, paid no less than 25 per cent. of the total tonnage rates received by the board. They had thus, reduced to terms of money, a strong backing of what they believed to be their moral right for the representation they confidently sought. He hoped the Dock Board would give serious consideration to their appeal.

Tenders for New Landing Stage.

Wallasey Corporation requires, by August 8th, tenders for repairing the approach to Egremont landing stage, comprising a pier about 340-ft. long by 18-ft. wide, supported on cast-iron columns, with a wrought steel superstructure and reinforced concrete decking; also a wrought steel bridge 150-ft. long by 18-ft. wide with timber decking; together with other incidental works.

The contract drawings and specification may be seen at the offices of the engineers, Sir John Wolfe Barry and Partners, Dartmouth House, 2, Queen Anne's Gate, Westminster, S.W.1, or at the office of the General Manager, Ferries' Department, Seacombe, and copies of the drawings and specification, together with a schedule of quantities and form of tender, may be obtained at either of the above offices upon payment of 10 guineas.

Whitehaven Harbour Board.

Whitehaven Harbour Board has paid the full statutory interest for the half-year to holders of bonds in all classes, the "A" bonds receiving interest at the rate of 3½ per cent. per annum, the "B" bonds 2½ per cent., and "C" and "D" 1½ per cent. and 1 per cent respectively. The chairman (Mr. J. H. Cant) said they were able to do this because they had had a straight half-year, their having been no industrial disputes. There had also been an increase in the export of coal last half-year, and he hoped this was the forerunner of better trade.

Lower Dock Charges Wanted.

Liverpool and Bootle Corporations are co-operating in an effort to secure lower dock charges in the case of ships lying up for repairs. The Dock Board is to be approached by representatives of the two corporations.

Notes from the North—continued

Completion of Under-River Tunnel.

Mersey Tunnel Joint Committee reports that the contract for the construction of the full-width, iron-lined tunnel under the Mersey is now completed. The amount of the contract was £1,413,601, and a final certificate was submitted amounting to £1,478,368, showing an excess of £64,767, equal to 4.5 per cent. On the other three contracts 370 men are employed. Expenditure on the four contracts has now reached £3,239,000, equal to 101 per cent. of the contract totals. In addition £216,000 has been spent on the six ventilation stations, and £28,876 has been certified in respect of contracts for ventilation equipment.

Bromborough Dock.

Mr. H. W. Smail, assistant traffic manager of Messrs. Lever Bros., owners of Bromborough Dock, gave an address on "Modern Storage and Distribution Methods," at the concluding session of the Convention of the Railway Students Association at Liverpool. He said the great thing in warehousing, and the great point they had to endeavour to study, was the elimination of handling, because reduction in the number of handlings obviously reduced their costs, and reduced the liability to breakage and damage. Since the opening of the Bromborough Dock they had introduced the use of a two-and-a-half ton skip, the contents of which were slung by cranes into the coastwise steamers, which had had the effect of immensely cutting down costs to their coastwise depots. The future of the transport side of the Lever business would undoubtedly be influenced by the Bromborough Dock, but to what extent or in what direction it was rather difficult to forecast at the moment. The dock brought down their internal costs tremendously, and although at the present, trade was none too bright, they believed that in years to come Bromborough Dock would be the centre of a number of factories on their estate.

New Mersey Bridge.

A new bridge is being built across the River Mersey between Latchford and Howley by Messrs. Bolton and Lakin, public works contractors, of Birmingham. The preliminary work, such as excavating and other operations below water and ground level is now completed, but it will take probably another eight months before the bridge is ready for opening. The whole of the steelwork for use in connection with the bridge is being supplied by the Pearson and Knowles Engineering Co., Ltd.. "False" arches are now in course of construction in mild steel. Ferro-concrete arches will be placed on these, and the whole of the structure, which from the top, will have the appearance of a single-span bridge, will be faced with pink stone. The abutments on both sides are now practically completed, and the centre pier is about 2-ft. above water level. The bridge will have small arches at each side spanning the riverside paths. About 80 men are engaged on the contract.

Heavy Renewals in 1933.

Mersey Docks and Harbour Board has confirmed the two following recommendations of the Finance Committee:—(a) that the necessary arrangements be made for the Board's holding of £500,000 of 5 per cent. War Loan of 1929-47 to be converted into 3½ per cent. War Loan; and (b) to allow interest on new loans of money on bond as follows:—3½ per cent. per annum (vice 4¼ per cent.) for periods of three years and less than five years; and 4 per cent. per annum (vice 4½ per cent.) for periods of five to ten years, or such further periods as may be arranged.

Sir Max Muspratt declared that half-a-million of War Loan was a useful cushion, and they proposed to keep it. They had very large renewals to face next year, and it would be very useful to have that half-a-million in hand. The whole of this conversion transaction meant lower money on every pound that they borrowed for several years to come. They could not expect to reap the advantage of saving 1½ per cent. perhaps, on millions of loans falling due next year, and at the same time take the churlish attitude of making a pound or two more if they did not convert.

The chairman (Mr. R. D. Holt) said it was most important for the trade of the port to help the conversion through and try to establish an era of low money, and get their own debt by degrees put upon a very much lower interest basis.

The recommendations were confirmed.

Lower Port Charges Wanted.

Liverpool importers of canned goods consider the time has arrived when the Mersey Docks and Harbour Board should reduce dock and town dues charged in Liverpool on canned meats. We understand that the Board has been asked to make a comparison of the charges in London with those of the Mersey port.

Dock Board Defends Birkenhead Lairages.

Liverpool Corporation is trying to divert the Irish cattle trade from the Birkenhead Lairages (owned by the Mersey Docks and Harbour Board) to the new Stanley Abattoir and has provoked some controversy. At a recent meeting of the Docks Board, Mr. E. G. Brownbill, chairman of the Traffic Committee, referred to a statement to the effect that Manchester and Holyhead had increased their cattle imports whilst Preston which prior to 1921 had not entered into this trade, established itself, and now bade fair to rival Manchester. Manchester had been altogether closed as a landing place for live stock since April, 1931, said Mr. Brownbill, and from 1922 until the landing place was closed, the imports into Manchester were only about 3 per cent. of the total cattle exported from Ireland. The imports of cattle into Birkenhead since 1922, according to the seasonal demands had varied from 20 per cent. to 40 per cent. of the total exports from Ireland, and the lairages there had more than held their own both prior to and since the war. So far from the imports of Irish cattle into Birkenhead declining, it was interesting to note that during the first five months of this year 102,342 cattle were landed at the port as against 93,146 cattle during the corresponding period last year, or an increase of 9,196 cattle, and that notwithstanding the fact that there had been a slight falling-off in the total number of cattle exported from Ireland. Irish live stock landed at the Wallasey landing stage had only about 275 yards to traverse to the Wallasey lairage, whilst cattle which were intended for the Woodside lairage had to walk a distance of about 850 yards. Sheep and pigs had only 200 yards to walk to the lairage.

"It seems to me," concluded Mr. Brownbill, "that any endeavour to divert importations of cattle from Birkenhead to the Stanley cattle market, via Holyhead, is an unwise policy, for, after all, Birkenhead forms part of the Port of Liverpool, and any decrease in the importations of cattle to Birkenhead must indirectly affect the whole trade of the port, and particularly the shipping companies carrying the cattle, who, along with the Board, are very large contributors to the local rates and are large employers of labour in the City of Liverpool.

In Quest of Trawler Trade.

It may be expected that in the near future a further announcement will be made concerning the proposal that facilities should be provided at Liverpool to attract trawlers and thus help to create a new fishing industry on Merseyside. The Markets Committee of the Corporation recently had a consultation with the Mersey Docks and Harbour Board and both parties came to the conclusion that the present was not the most opportune time to consider embarking upon such a venture. The City Council, however, did not approve of the matter being shelved and referred back the report of the Markets Committee, which since has given further consideration to the proposition.

In committee, the suggestion was made that a special subcommittee should be appointed to consult with the Mersey Docks and Harbour Board, but this course did not commend itself to the majority of members who favoured authority being given to the Town Clerk to confer with the land steward and surveyor and the markets manager, for a further report to be compiled.

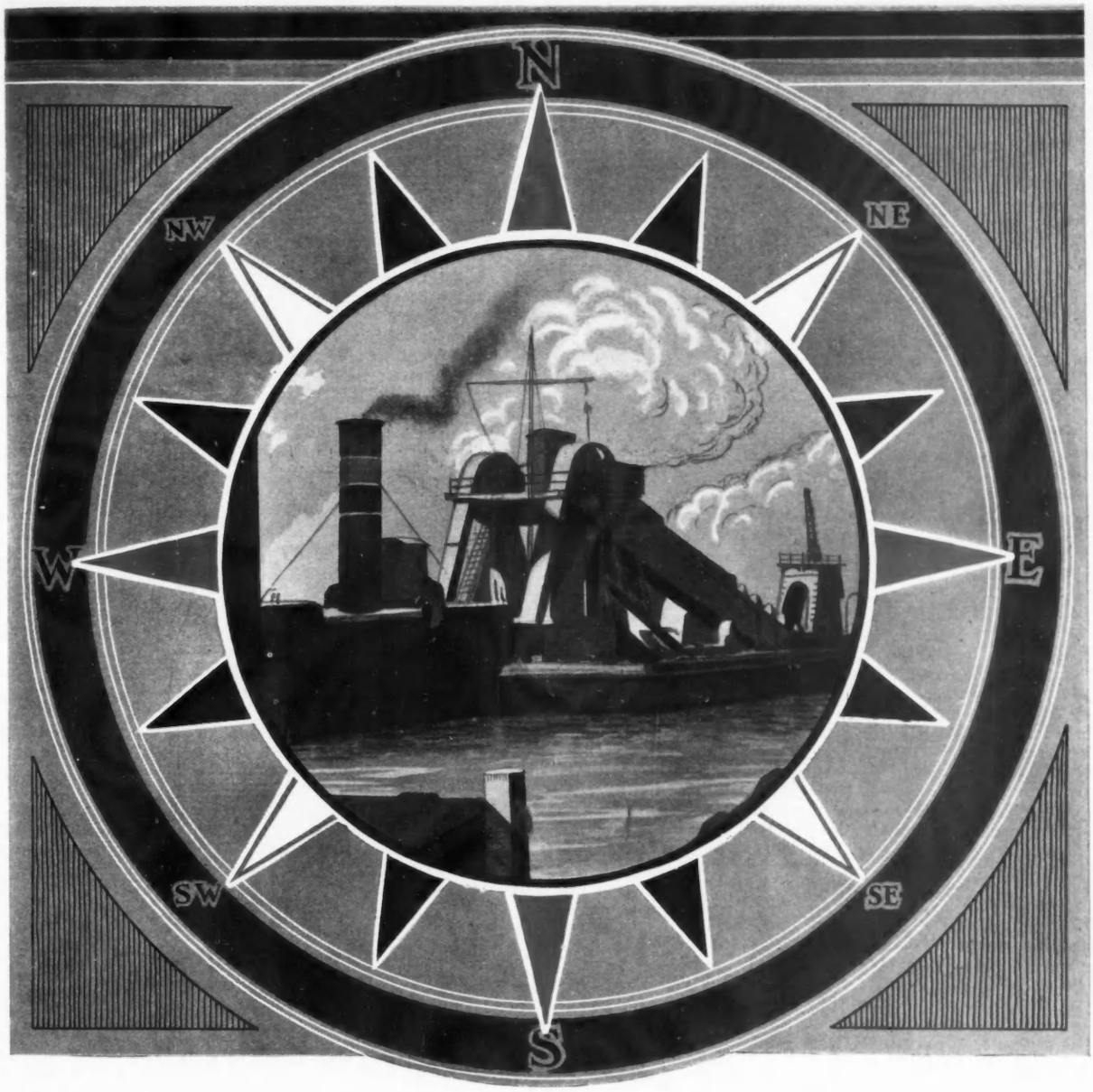
Dock Board's Pilotage Claim.

Mersey Docks and Harbour Board sued the North West Shipping Company on a claim for £2 11s. in the Liverpool County Court. The sum claimed was for pilotage allowances for an outward voyage of the "Ravonia," owned by defendants, from Garston. Roughly speaking, said Mr. A. J. Hodgson (for the Dock Board), compulsory pilotage in the Liverpool pilotage district ended at the Bar, and a line was drawn from the Bar to the Point of Ayr, so that if a vessel went out by the Rock Channel, compulsory pilotage ended at a buoy called the Hilbre fairway buoy. A first-class pilot was booked for the "Ravonia," and was dropped at Point Lynas. The last train from Amlwch from Liverpool had gone and so the pilot stayed all night aboard the boat and caught the early morning train to Liverpool.

The Dock Board claimed that the pilot was entitled to 10s. 6d. for each of the two days and 30s. for maintenance and travelling expenses. Defendants had paid into court £1 8s. made up of 10s. 6d. in respect of one day's allowance, 12s. 3d. railway fare from Amlwch to Liverpool, and 5s. 3d. for incidentals.

Mr. R. S. Nicklin, for defendants, quoted from the words of the Act, to the effect that a pilot should be entitled to a reasonable amount for travelling expenses and maintenance.

The judge upheld the Dock Board's claim and gave judgment for the Dock Board for the amount claimed, with costs. Leave to appeal was granted.



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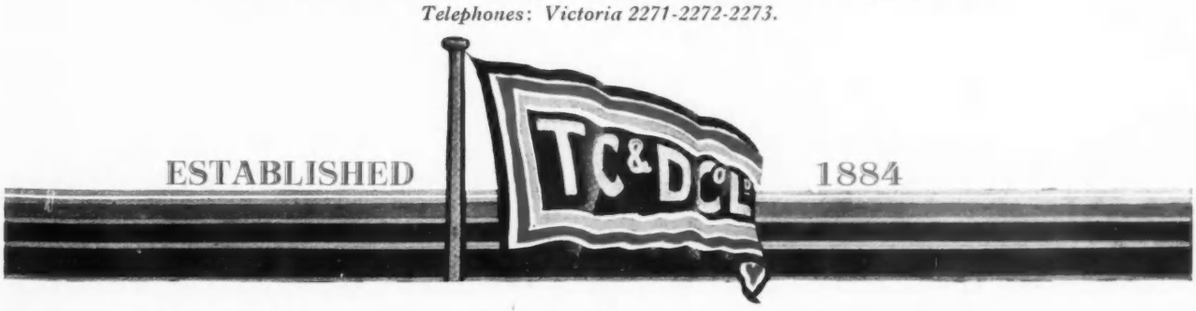


WHEN REPLYING PLEASE MENTION "THE DOCK AND HARBOUR AUTHORITY."

North-East Coast Notes.

Dispute over Diversion of Coal Trade from the Tyne to the Wear

THE dispute as to the diversion of the coal trade from the Tyne to the Wear in consequence of the lower charges at the latter port has entered on a new phase, for the Executive Board of the Durham District Coal Mines Scheme has decided that coal owners shipping in the Wear must in future charge 1½d. per ton over the scheduled minimum prices. It is believed that this will probably mean that 300,000 tons of coal now shipped from Sunderland will be sent from the Tyne. There has been some feeling on the matter, but interest is strictly limited for, unfortunately, any adjustment reached will not increase trade on the North East Coast in any way.

Newcastle's New Quay.

A report submitted to the Trade and Commerce Committee of Newcastle Corporation upon the progress of work on the new quay extension showed that 93 per cent. of the requisite number of concrete piles have been cast and 55 per cent. actually driven in place.

At the Town Council meeting on July 6th, a report was adopted from the Trade of Commerce Committee recommending the purchase of Langdale's chemical manure works at St. Lawrence, in connection with the new quay extension. Alderman W. Lee, the chairman, said the Corporation had the alternative of building protective works at a cost of £7,000 to safeguard Langdale's against dredging, or of purchasing the works and land outright at a cost of £35,000 and so relieving themselves of any possible future claims for compensation. Every expenditure on quay extension had been justified, he said, by an increase in trade and revenue. By the present scheme of extension they hoped to get large liners direct to the port and so save the cost of receiving goods overland from Liverpool, Glasgow, Hull and London—a cost which in the case of some goods amounted to an additional one-halfpenny per pound.

Lower Crane Charges.

In an effort to encourage shippers to make the fullest use of cranes on the Corporation Quay, the Newcastle Trade and Commerce Committee have approved a sub-committee's recommendation that cranage charges be reduced very materially. The old charge for a load of 5 to 7½ tons was 3s. 9d. This is reduced to 3s.; for 20 to 25 tons it was 12s. 9d. which is brought down to 6s., while for loads of 55 to 65 tons a charge of 10s. will be made instead of 23s. Other charges are lowered proportionately.

An increase in the coke shipments from the Tyne continues to be almost the only bright spot in the trade reports. The quantity for May was 40,973 tons, which showed a 24 per cent. increase on the 1931 figures, and 62 per cent. on the 1913 figures. Bunker coal shipments for the five months at 754,854 tons were 47,140 tons up on 1931. Coal shipments during May totalled 1,014,642 tons against 1,119,352 tons shipped in the corresponding period of last year. Over the five months ended May 31st, the aggregate shipments were 5,423,344 tons, against 6,087,435 tons in the first five months of 1931.

With regard to laid up tonnage, Alderman Sykes said at the meeting of the Tyne Commission that the position had not improved. There were now 165 vessels with an aggregate tonnage of 330,809 tons laid up in the river. He added that he regretted to report the figures reached a new peak on June 2nd, when they had as many as 168 vessels laid up with a total tonnage of 335,302.

Tyne's Trade Ambassador.

Mr. R. S. Dalgliesh, chairman of the Docks and Trade Committee, announced at the June meeting of the Tyne Improvement Commission that Mr. Richard Aughton, their general manager, was shortly going to visit Scandinavia and other countries in the Baltic, with a view to stimulating trade and, if possible, making new connections between Tyneside and those countries. Mr. Dalgliesh said: "It is some time since our general manager was abroad looking after trade for the Tyne. Various circumstances have intervened which have made it doubtful whether it would be worth while during the last two years, one of which circumstance it is not too much to say, has been the effect of the Coal Mines Act on foreign buyers. Now, however, we think it would be well to renew the visit of two years ago paid to Scandinavia, and at the same time to travel some of the other countries in the Baltic." Mr. Dalgliesh added: "The Scandinavian countries, it is pleasing to note from our figures, are this year taking more coal from this side; hence it is felt that time is appropriate for a renewal of previous visits. It is also thought that some good might be done in other directions and in other countries. Mr. Aughton previously paid visits to Italy, Norway, and other countries in the interests of Tyneside trade."

Wear Trade Reports.

The coal and coke shipments from the Wear still show an advance on the figures for 1931. During May, 349,543 tons were shipped compared with 337,735 tons in 1931, and for the first five months of this year 2,061,094 tons were shipped compared with 1,937,372 tons, an increase of over 124,000 tons. Other exports for the first five months were: Machinery 685 tons; iron and steel 407 tons; pitch and tar 8,150 tons; petroleum 5,448 tons, and sundries 4,454 tons. Details for the first five months of imports are as follows: Timber 24,068 tons; grain 200 tons; esparto 9,782 tons; cement 7,781 tons; petroleum 27,131 tons; wood pulp 2,285 tons; iron and steel 2,160 tons; sundries 29,752 tons. Taken altogether there is a decrease of about 10,000 tons on last year.

A loading record for the port was accomplished at Seaham Harbour at the beginning of July. The Londonderry steamer "Maureen" arrived on Saturday, July 2nd, and began loading at 7.40 a.m. By 5.45 p.m. she had completed taking in a cargo and bunkers of 4,038 tons and afterwards sailed for London. The rate of loading was more than 400 tons per hour.

Blyth Shipment Statistics.

The chairman of the Blyth Harbour Commission (Mr. Ridley Warham), reported at the June meeting that the amount of waiting berth accommodation for laying up ships was practically fully occupied, the number of ships being 13. The chairman submitted the following figures for May which show a decrease for the month as compared with 1913, but an increase on 1931. May 1932, 364,077 tons; May 1931, 350,970 tons; May 1913, 412,885 tons.

For the first five months ended May 31st, the totals show a satisfactory return as follows: For the five months ended May 31st, 1932, 2,086,498 tons; 1931, 1,884,767 tons; 1913, 1,931,695 tons. These figures show an increase of 8 per cent. on 1913, and 11 per cent. on 1931.

Progress at Hartlepool and Tees.

The return of the coal and coke shipments from the Hartlepools for the first half of the year and of the import of wood goods in the same period, shows that the port is more than maintaining its position so far as the volume of trade handled is concerned. Coal and coke shipments are 2.67 per cent. higher than the record established in the corresponding period of last year, whilst wood imports are up by no less than 64.92 per cent. In the case of coal and coke the total shipments in the past six months amount to 1,612,278 tons, compared with 1,570,220 tons in the corresponding period of 1931. The import of wood goods in the past six months amounted to 113,621 loads against 68,892 loads in the first six months of last year, being an increase of 44,729 loads. This increase is entirely due to an increase of 52,099 loads in the import of pit props.

That the trade of the Tees is gradually recovering from the depression which has marked it for the past five or six years is reflected in the official statistics just issued of traffic during the month of June. Imports of ore, which represent the raw material of the iron trade, have been the heaviest of any month this year, and exceed in bulk the tonnage imported in the months of April and May combined; pig iron clearances are 3,000 tons in excess of the May figures, and for the first time this year manufactured iron and steel shipment exceed 30,000 tons.

Weser River Shipping in May

Traffic through the Bremen Weser Lock in both directions only amounted to 107,700 tons. That is 34,200 tons less than in April and 20,700 tons less than in May, 1931. Compared with the previous month downstream traffic, with 66,400 tons, was 30,900 tons less, as coal transport fell off considerably and, with the exception of gravel and stones, all other commodities (potash and salt, piece goods, etc.) showed a decline. Upstream, as a result of smaller shipments of grain, traffic fell from 44,600 tons to 41,300 tons.

In the months January-May, 1932, altogether 498,700 tons were carried. Compared with the similar period in 1931 this means a decrease of 100,000 tons, or 17 per cent. However, the loss is only shown by downstream traffic, which, with 340,100 tons, was 125,400 tons, or 27 per cent. less, especially due to the smaller traffic of gravel and sand (—43,100 tons), coal (—37,700 tons) and potash and salt (—27,700 tons). Upstream the quantity of goods exceeded that of the previous year with 158,600 tons, by 25,400 tons, or 19 per cent. chiefly due to larger grain transports.

The Port of New York

Latest Data issued by the Bureau of Commerce

Super-Liner Piers Progressing.

THREE new piers to accommodate the 900-ft. ships now using New York Harbour and the 1,000-ft. ships now building are rapidly taking form on the Manhattan waterfront at the foot of West 48th, 50th and 52nd Streets. These piers are the first units of a five-pier project of the Dock Department of the City of New York, construction of which started in November, 1931. The size of the piers, 1,100 by 125-ft. with 400-ft. berthing slips between, permits docking of ships of the "Majestic," "Berengaria," "Leviathan" and "Ile de France" class and the 1,000-ft. superliners now on the ways in British and French yards.

The new piers are of such length that excavation into the upland is necessary in order to meet the requirement that the ends shall not project beyond the pierhead line established by the Secretary of War to protect the Hudson River fairway for unobstructed navigation. In January, 1931, Secretary of War Hurley modified the pierhead line after protracted hearings to allow extension of the piers 75-ft. further from the Manhattan shore than was permitted under the old pierhead line. This advance on the Manhattan side was accompanied by a recession on the opposite shore, preserving the fairway, and was compensated by recessions at other points on the Manhattan side which permitted corresponding advances on the New Jersey shore. Despite the additional 75-ft. gained at the outshore end under the Secretary of War's decision, the necessary length can be secured only by digging out the inshore end for a distance of approximately 325-ft.

In order to accomplish this excavation in the most satisfactory manner the inshore end has been enclosed with a temporary cofferdam 2,139-ft. long, extending 312-ft. out on the south side and 251-ft. on the north side, from which the water will be pumped to permit blasting and steam shovel work "in the dry" to a depth of 46-ft. at mean low water. It is estimated that 479,000 cubic yards of rock will be taken out. Meanwhile the construction of the outer ends of the piers by driving piles into the river bed has progressed to the point where over 500-ft. of each pier is finished ready for the concrete decks. To guard against a repetition of the disastrous fire on Pier 54, which collapsed with the burning of the substructure piling above the waterline, the new piers will have a concrete fire wall between deck and waterline at intervals of 140-ft., confining any blaze to the area in which it starts.

The building of the cofferdam, which at the present time is almost completed, presents an interesting bit of engineering. It is built of interlocking steel sheet piling, forming two rows, 60-ft. apart, of a series of arcs of about 25-ft. radius. The two walls are tied together at the inter-section of the arcs by lines of piling, thus forming a rigid structure. The space between the piling is filled with stone and cellar dirt deposited by dump trucks, for the accommodation of which a runway over the structure has been built. About 4,200 cubic feet of material is contained in each of the pockets of the cofferdam wall.

The piers, when finished, will have a two-storey superstructure, the upper story of which will be connected with the elevated express highway, to be built over the marginal street. The contract cost of the building of the piers, up to and including the concrete decks, and the necessary excavation, is $4,099,000, and the work is being prosecuted by Allen N. Spooner and Son, contractors. The piers will be completed in 1933.

Foreign Trade at the Port of New York.

The value of foreign trade at the Port of New York during the month of April, 1932, amounted to $103,963,000, which is 39 per cent. below that of the corresponding month last year. Exports were $42,177,000, a drop of 48 per cent., and imports were valued at $61,786,000, a decline of 32 per cent.

	April 1932 $	April 1931 $	Net Change Amount $	Net Change Per Cent.
Exports	42,177,000	80,522,000	—38,345,000	—47.7
Imports	61,786,000	90,927,000	—29,141,000	—32.1
Exports and Imports	103,963,000	171,449,000	67,486,000	—39.3

Compared with the foreign trade of the United States as a whole, the value of exports and imports at New York in April represented 40 per cent. as against 43 per cent. in April, 1931.

For the four months ending April, the value of exports and imports at the Port of New York were as follows:—

	January to April 1932 $	January to April 1931 $	Net Change Amount $	Net Change Per Cent.
Exports	181,868,000	352,478,000	—170,610,000	—48.3
Imports	262,648,000	362,913,000	—100,265,000	—27.6
Exports and Imports	444,516,000	715,391,000	—270,875,000	—37.9

The loss of nearly half of the export trade of last year, which was itself far below that of 1930, to say nothing of 1929, is of serious moment to the Port of New York as it is to all ports during these times. The railroads, steamship lines, terminal companies, warehousemen, stevedores, truckmen and forwarders serving the port employ in normal times upwards of 600,000 men. The investment in railroads, shipping, warehouses and docks, a part of which belongs to the public through municipal ownership, exceeds $8,000,000,000.

Where has the export trade of the port gone? The statistics of exports by countries from the Port of New York, available up to February and March, 1932, in the files of the United States Department of Commerce, throw some light on the subject. All figures are given in dollar values and allowance must be made for falling prices per unit. The Department of Commerce figures show that 60 to 65 per cent. of the exports from the Port of New York went to Europe a year ago. South America was our second best customer, with about 12 per cent.; Asia, the rest of North America, Africa and Oceania in the order named accounted for the remaining 25 per cent.

The policies of the United States towards European countries and of European countries towards the United States profoundly affect the course of export trade through the Port of New York and the lives and welfare of those dependent upon this trade. In February, 1931, Russia and the United Kingdom were the best customers of the Port of New York, an aggregate of $35,000,000 of exports flowing to these two countries, out of a total of $90,000,000 to all the world. By February, 1932, exports to Russia from the Port of New York had fallen from $20,000,000 to less than $2,000,000, a loss of $18,000,000 to that one country alone. In March, 1932, exports to Russia were less than $1,000,000 against nearly $7,000,000 in March, 1931.

On March 1st, 1932, the British Import Duties Act became effective, placing a duty of 10 per cent. upon imports from the United States. Great Britain was following the lead of the United States in tariff policy. March exports to the United Kingdom from the Port of New York fell to $6,652,000, a loss of nearly $9,000,000 compared to a year ago. Total loss in trade to Russia and United Kingdom in March, 1932, was $15,000,000 under similar period in 1931. Forty per cent. of our entire trade decline found in two countries, formerly our best customers.

Trade with the Orient is not suffering so much. The National Foreign Trade Council calls attention to the fact that exports from the United States to China, Japan and India were actually 6 per cent. greater in volume in 1931 than in the previous year. Fine for the Pacific ports, but less than 10 per cent. of the exports from New York go to these countries. The best customers of the Port of New York lie across the Atlantic and the future of our trade depends upon maintenance of satisfactory commercial relations with them.

Vessel Movements in Foreign Trade.

The number of entrances and clearances of vessels in foreign trade at the Port of New York during the month of May, 1932, were 2 and 12 per cent., respectively, below those of the corresponding month last year.

	May, 1932 No. of Vessels	May, 1932 Vessel Tonnage	May, 1931 No. of Vessels	May, 1931 Vessel Tonnage
Entrances ...	470	2,316,788	478	2,434,601
Clearances ...	448	2,228,388	511	2,542,351

Commerce at Port Newark.

The receipts of lumber by vessel during the month of May, 1932, at Port Newark amounted to 9,138,000 board feet, which is 12 per cent. less than was received in May of last year, when the amount was 10,351,000 board feet. Shipments of lumber from Port Newark into the interior amounted to 13,677,000 board feet during the month, of which 4,993,000-ft. moved by railroad car, and 8,684,000-ft. by truck.

Receipts by vessel of cargo other than lumber continue to be greater in volume than last year. During the month of May, 1932, this traffic amounted to 21,070 tons as compared to 8,470 tons handled in May, 1931, being an increase of 149 per cent. This tonnage included 15,075 tons of potatoes, about two-thirds of which were shipped from Maine, and the remainder from Prince Edward Island.

Thirty-four steamers arrived at Port Newark during the month, compared with 19 in May, 1931.

Inter-Coastal Traffic.

The volume of traffic between the Port of New York and Pacific Coast ports during the last quarter of 1931 was 32 per cent. under that of the same period in 1930. The decline was most pronounced in the eastbound traffic which dropped 34 per

The Port of New York—continued

cent., while the westbound movement was only 15 per cent. less than the previous year. The receipts amounted to 539,032 tons as compared to 817,262 tons in the fourth quarter of 1930, and shipments were 104,986 tons as against 123,718 tons for the same period in the previous year.

The figures for the calendar year 1931 show a decline of 16 per cent., the receipts being 15 per cent. lower than for the year 1930, and the shipments 18 per cent. less.

Inter-Coastal Traffic at the Port of New York.

	Calendar Years, Long Tons		Net Change	
	1931	1930	Amount	Per Cent.
Receipts	2,549,644	3,015,387	−465,743	−15.4
Shipments	448,449	549,254	−100,805	−18.3
Receipts and Shipments	2,998,093	3,564,641	−566,548	−15.9

Petroleum products, and lumber are by far the most important commodities in point of volume, of the eastbound inter-coastal traffic. The volume of the principal commodities among the receipts in 1931 compared with 1930 were as follows:—

	Tons		Net Change	
	1931	1930	Amount	Per Cent.
Petroleum Products ...	983,537	1,455,493	−471,956	−32.4
Logs and Lumber ...	797,007	804,822	−7,815	−0.1
Canned Fruits	141,989	152,244	−10,255	−6.8
Dried Fruits	102,006	89,480	+12,526	+14.0
Sugar	95,818	26,062	+69,756	+267.6
Vegetables and Products	64,279	77,222	−12,943	−16.8
Paper, Stock and Manufactures	53,535	73,827	−20,292	−27.5
Wheat Flour	49,019	43,532	+5,487	+12.6

Gains were also registered in receipts of fertilizer, canned milk, fruits, nuts, wool and wool manufactures, and animal and dairy products, while declines were shown in fish and products, raw cotton, tobacco and manufactures, and crude petroleum. In the westbound traffic, pigments, chemicals, and manufactures, and iron and steeel manufactures, are the commodity items of greatest volume. The chief commodities among the shipments, and the comparative volumes for the two years are shown below:—

	Tons		Net Change	
	1931	1930	Amount	Per Cent.
Pigments, Chemicals and Manufactures	68,391	79,384	−10,993	−13.8
Iron and Steel Manufactures ...	50,645	95,234	−44,589	−46.8
Vegetables and Vegetable Products	30,854	36,605	−5,751	−15.7
Paper Stock and Manufactures	24,693	30,022	−5,329	−17.7
Petroleum and Manufactures ...	17,026	22,473	−5,447	−24.2
Vehicles	16,859	9,222	+7,637	+82.9
Machinery	15,414	28,295	−12,881	−45.5
Textiles	12,251	14,405	−2,155	−15.0

Substantial gains were made in westbound shipments of wheat flour, nuts, rubber and manufactures, vehicles and phosphate. Vegetables and vegetable products, dried and canned fruits, paper stock and manufactures, and iron and steel manufactures, registered declines.

The annual volumes of inter-coastal traffic in long tons at the Port of New York since 1923 are as follows:—

Year	Receipts	Shipments	Receipts and Shipments
1931	2,549,644	448,449	2,998,093
1930	3,015,387	549,254	3,564,641
1929	3,470,303	686,380	4,156,688
1928	3,058,436	605,131	3,663,567
1927	3,821,906	587,398	4,409,304
1926	3,312,746	533,846	3,846,592
1925	3,015,264	486,475	3,501,739
1924	5,107,064	537,676	5,644,740
1923	5,240,919	636,713	5,877,632

Steamship Passenger Traffic.

Steamship travellers to and from foreign countries via the Port of New York are not as numerous as in other years. The number of arrivals and departures for April total 47,996 (or approximately 12,500 less than the 60,443 travelling in that month a year ago. The major part of this decrease is due to the lesser number of United States citizens who are going abroad or returning from foreign countries.

	April, 1932	April, 1931
INBOUND—		
Aliens, Immigrant	1,490	2,275
Aliens, Non-Immigrant	7,445	9,545
U.S. Citizens	16,168	20,301
Total ...	25,113	32,121
OUTBOUND—		
Aliens, Emigrant	3,752	2,445
Aliens, Non-Emigrant	6,140	9,684
U.S. Citizens	12,991	16,193
Total ...	22,883	28,322
Total Inbound and Outbound	47,996	60,443
Total for Four Months	174,714	216,433

Steamship Sailings.

The total of all vessels sailing from the Port of New York continues at approximately 12 per cent. under last year's departures. In May, 1931, a total of 1,491 sailings was reported, while in the same month this year the total dropped to 1,314.

The larger share of the decrease occurred in sailings of vessels in regularly scheduled foreign service. While 397 such vessels sailed from this port in May last year, only 296 sailed during that month this season, a drop of 25 per cent.

Schedules have been revised and curtailed on nearly all the important routes. May sailings to French-Atlantic ports decreased 38 per cent., Italy-Mediterranean ports 36 per cent., Caribbean-Mexican ports 32 per cent., the United Kingdom 24 per cent., North European ports 23 per cent. and South American ports 23 per cent.

Direct sailings to the Pacific Coast also decreased approximately 16 per cent. However, the Port of New York still has the most frequent and fastest service to all principal world ports, as is indicated by the total of 82 sailings on Saturday, May 28th, the peak day of the month. Of these sailings 41 were in foreign service, including 7 to the United Kingdom, 3 to the Baltic, 2 to Hamburg-Bremen, 1 to Rotterdam-Antwerp, 1 to Italy and the Mediterranean, 1 to Spain-Portugal, 8 to Caribbean-Mexican ports, 2 to South America, 3 to the Far East, 1 Foreign Cruise and 6 tankers.

Included in the 41 domestic sailings were 5 to the Pacific Coast, 8 to Atlantic and Gulf ports, 4 tankers and 3 coal carriers.

Grain Exports.

The volume of grain exports from the Port of New York during the month of April, 1932, was 23 per cent. greater than during the same month in 1931. As in the previous month, the gain over last year was due entirely to increased exports of the domestic product, which in April, 1932, showed a gain of 420 per cent. over the corresponding month last year. Shipments of Canadian grain in transit fell off 36 per cent. as compared with April, 1931. It is worthy of note that the volume of domestic grain exceeded that of Canadian, in the exports from the Port of New York for the first time since October, 1927.

	April 1932 Bushels	April 1931 Bushels	Net Change Amount	Net Change Per Cent.
Domestic and Canadian Grain	5,049,000	4,101,000	+948,000	+23.1
Domestic Grain	2,783,000	535,000	+2,248,000	+420.2
Canadian Grain	2,266,000	3,566,000	−1,300,000	−36.4

The volume of exports for the first four months of the year were 24 per cent. below the corresponding period in 1931. Domestic grain exports showed a gain of 400 per cent., but shipments of Canadian grain fell off 48 per cent.

	January-April 1932 Bushels	January-April 1931 Bushels	Net Change Amount	Net Change Per Cent.
Domestic and Canadian Grain	15,286,000	20,016,000	−4,730,000	−23.6
Domestic Grain	5,587,000	1,118,000	+4,469,000	+399.7
Canadian Grain	9,699,000	18,898,000	−9,199,000	−48.5

Receipts of Grain and Visible Supply at the Port of New York

The receipts of domestic and Canadian grain at the Port of New York during the month of May, 1932, amounted to 7,174,327 bushels, of which 5,796,327 bushels arrived via the New York State Canal System, and 1,378,000 bushels by rail. The receipts during the month were 28 per cent. less than in May, 1931.

RECEIPTS (Bushels).

	May 1932	May 1931	Net Change Amount	Net Change Per Cent.
Wheat	6,028,949	8,242,000	−2,213,051	−26.9
Barley	3,400	1,130,400	−1,127,000	−99.5
Corn	257,375	84,000	+173,375	+20.6
Oats	301,135	536,000	−234,865	−43.8
Rye	583,468	—	+583,468	—
All Grain	7,174,327	9,992,400	−2,818,073	−28.2

For the five months ending May, 1932, the receipts of grain, compared with the corresponding period last year, were as follows:—

RECEIPTS OF GRAIN (Bushels).

	January-May 1932	January-May 1931	Net Change Amount	Net Change Per Cent.
Total Grain	15,974,492	24,352,403	−8,377,911	−34.3
Wheat	13,846,349	20,677,000	−6,830,651	−33.0
All other	2,128,143	3,675,403	−1,547,260	−42.0

The visible supply of grain in storage in the port on May 28th, 1932, and May 30th, 1931, which is the nearest comparable date, is as follows:—

VISIBLE SUPPLY (Bushels).

	May 28 1932	May 30 1931	Net Change Amount	Net Change Per Cent.
Wheat	4,228,000	1,830,000	+2,398,000	+131.0
Barley	4,000	46,000	−42,000	−91.3
Corn	86,000	4,000	+82,000	+2,050.0
Oats	167,000	67,000	+100,000	+149.3
Rye	506,000	14,000	+492,000	+3,514.3
All Grain	4,991,000	1,961,000	+3,030,000	+154.5

Aden Port Trust.

Returns for the month of April, 1932, of shipping using the Port of Aden :—

	No.	Tonnage
Merchant Vessels over 200 tons ...	120	531,124
,, ,, under 200 tons ...	3	486
Government Vessels	9	19,995
Dhows	115	3,776
PERIM.		
Merchant Vessels over 200 tons ...	16	43,350

Rs.49,27,000, as compared with Rs.41,66,000 for April, 1931, and of exports Rs.23,35,000, as compared with Rs.29,78,000.

The total value of both imports and exports together was Rs.72,62,000, as compared with Rs.71,44,000 for the corresponding month last year.

Imports during the month were above those for April, 1931, in the case of coffee, grain, pulse and flour, seeds, sugar, piece goods (white and printed or dyed), tobacco (unmanufactured and manufactured); and below in the case of gums and resins, hardware, hides (raw), skins (raw), piece goods (grey), twist and yarn, and treasure (private).

Exports were above those for April, 1931, in the case of piece goods (printed or dyed); and below in the case of coffee, grain, pulse and flour, gums and resins, hardware, hides (raw), seeds, skins (raw), sugar, piece goods (grey and white), twist and yarn, tobacco (unmanufactured and manufactured), and treasure (private).

TRADE OF THE PORT.

Article.	Unit.	Imports.		Exports.	
		Quantity.	Value Rs.	Quantity.	Value Rs.
Coal	Tons	1,999	31,974	0	0
Coffee	Cwts.	8,556	2,60,227	6,906	2,93,999
Grain, Pulse and Flour	,,	39,576	2,15,228	19,124	94,956
Gums and Resins	,,	3,028	50,750	4,112	72,915
Hardware	—	0	12,965	0	13,757
Hides, raw	No.	720	1,050	1,839	2,652
Oil, Fuel	Tons	58,425	17,52,750	0	0
,, Kerosene	Gls.	31,121	23,193	5,952	4,698
,, Petrol	,,	52,159	58,199	336	462
Salt	Tons	0	0	16,000	2,05,000
Seeds	Cwts.	3,114	29,244	430	5,804
Skins, raw	No.	223,617	90,288	169,941	2,06,141
Sugar	Cwts.	26,210	1,63,364	11,406	70,954
Textiles—					
Piece Goods, Grey	Yds.	3,505,750	5,23,295	3,197,535	4,94,895
,, ,, White	,,	695,110	1,40,698	263,782	60,416
,, ,, Printed or Dyed .	,,	960,059	2,13,313	881,776	2,12,381
Twist and Yarn	Lbs.	89,700	43,915	66,832	36,012
Tobacco, Unmanufactured	,,	1,120,728	1,86,588	382,844	59,125
,, Manufactured	,,	37,086	45,231	18,844	15,769
Other Articles	No. of Pkges.	48,867	8,15,791	17,354	3,16,355
Treasure, Private	—	0	2,68,633	0	1,68,860
Total ...	—	—	49,26,696	—	23,35,151

The number of merchant vessels over 200 tons that used the port in April, 1932, was 120, as compared with 127 in the corresponding month last year, and the total tonnage was 531,000, as compared with 516,000.

Excluding coal, salt, fuel oil and military and naval stores and transhipment cargo, the total tonnage of imports in the month was 8,900 and of exports 4,200, as compared with 7,600 and 5,600 respectively for the corresponding month last year.

The total value of imports excluding Government stores was

Lloyd's Register Shipbuilding Returns for the Quarter ended 30th June, 1932

FROM the statistics issued by Lloyd's Register of Shipping regarding vessels under construction at the end of June in Great Britain and Ireland there is a decrease of 92,281 tons in the work in hand as compared with the figures for last March, and the present total—280,692 tons—is 274,911 tons less than the tonnage which was being built at the end of June, 1931. The figure for June, 1932, includes about 159,000 tons on which work has been suspended—126,000 tons of steamers and 33,000 tons of motor ships. The present total of 280,692 tons is lower than any comparable figure hitherto recorded by Lloyd's Register during a period of more than 50 years.

Nearly 89,000 tons—representing 31.6 per cent. of the tonnage now in hand in this country—are intended for registration abroad or for sale.

The tonnage now under construction abroad—829,081 tons—is about 96,000 tons less than the work which was in hand at the end of March, 1932. Tonnage, included in this figure, on which work has been suspended amounts only to 3,290 tons of steamers and 13,263 tons of motor ships.

The five leading countries are:—Italy, 180,565 tons; United States of America, 162,203 tons; France, 128,128 tons; Germany, 103,500 tons, and Sweden, 89,201 tons.

The total tonnage under construction in the world amounts to 1,109,773 tons, of which 25.3 per cent. is being built in Great Britain and Ireland, and 74.7 per cent. abroad.

In Great Britain and Ireland, only 27,956 tons were commenced during the last three months, albeit an increase of 2,243 tons compared with the very low figure for the March quarter. During the quarter just ended, 69,255 tons were launched in Great Britain and Ireland. This figure shows an increase of 33,931 tons over the unprecedentedly low total for the March quarter. Similar figures for abroad are 42,540 tons commenced, and 124,871 tons launched, showing a decrease, as compared with the previous quarter, of 12,005 tons in the tonnage commenced, while there has been an increase of 35,381 tons in the tonnage launched. These figures, however, again reflect clearly the inactivity so widely prevalent in the shipbuilding industry.

The oil tankers under construction in the world amount to 33 vessels of 272,869 tons, of which 6 vessels of 47,216 tons are being built in Great Britain and Ireland, 11 vessels of 74,421 tons in Sweden, and 6 of 72,400 tons in Germany. It is noteworthy that, of the 33 tankers under construction, 31 are motor ships, and that the two steam tankers are both being built in Great Britain.

The tanker tonnage now in hand comprises 24.6 per cent. of the total steam and motor tonnage being built in the world.

In Great Britain and Ireland the steam tonnage under construction at the end of June (245,374 tons) exceeded the motor ship tonnage by 211,000 tons. The motor ship tonnage being constructed abroad at the same date (445,662 tons) was nearly 63,000 tons in excess of that of the steamers.

Of the vessels being built in the world at the end of June, there are 6 steamers and 21 motor ships of between 8,000 and 15,000 tons; 2 steamers and 3 motor ships of between 15,000 and 25,000 tons; and 6 steamers and no motor ships of 30,000 tons and upwards.

The table respecting marine engines shows that the horse-power of steam engines now being built or being fitted on board amounts to about 944,000 h.p., while the figures for oil engines aggregate about 410,000 h.p. The figures for steam engines include 23 sets of turbine engines of about 826,000 shaft h.p., giving an average of nearly 36,000 h.p. per set. The horse-power of the steam reciprocating engines (about 115,000 h.p.) is about 8.5 per cent. of the total horse-power of marine engines now building in the world.

Tonnage to Lloyd's Register Class.—Although affected by the continued reduction in the amount of work in hand, the tonnage in course of construction throughout the world under the inspection of Lloyd's Register reaches 640,798 tons; of this total, 261,529 tons are being built in Great Britain and Ireland and 379,269 tons abroad.

Recent Improvements and Reconstruction Works in Glasgow Harbour

By A. C. GARDNER

(Concluded from page 278)

General Terminus Quay Wall: Reconstruction.

General Terminus Quay is the westernmost portion, 425 yards in length, of what was originally called Springfield Quay, and the construction of this quay wall was described in a paper on " The Old Quay Walls of Glasgow Harbour " read before this Institution by the late Mr. W. M. Alston.* The wall, which was completed in 1850 and strengthened with sheet piling and tie-rods in 1884, was originally designed to give a depth of water of 10-ft. at mean low water of ordinary spring tides.

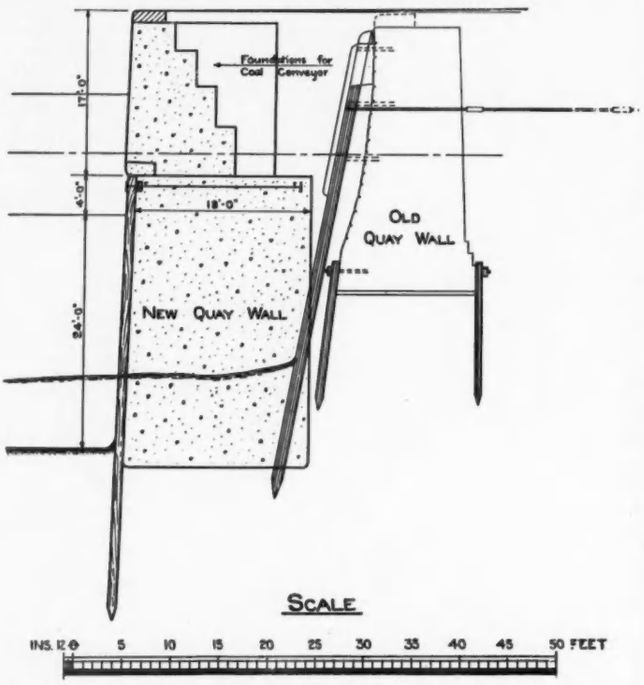


Fig. 9. General Terminus Quay. Ordinary Wall.

Since the date of construction low water level in the harbour has fallen more than 4-ft. and the berths have been dredged to give a depth of 15-ft. at low water. This was possible only because of the strengthening work of 1884, but it meant that the river bottom at the quayside was about 7-ft. 6-in. below the foundation of the wall, and latterly the quay wall began to show signs of distress and had to be watched very carefully. The need for its reconstruction therefore became imminent when the L.M.S. Railway Company, who had the use of this quay and owned the steam coaling cranes located on it, came forward with a proposal to scrap these cranes and instal in their stead two belt conveyors. The old wall not being strong enough to carry the weight of the conveyor towers, the Trustees decided to build a portion of the new wall 100-ft. in length in front of it, in order to provide such accommodation at the site of each conveyor. After this work had been commenced, it was decided to continue the reconstruction of the entire wall for a length of 1,275-ft. under arrangement with the Unemployment Grants Committee who were to contribute towards the cost of the work.

The new wall is designed for a depth of water in front of the quay of 24-ft. at mean low water of ordinary spring tides, and has been so re-aligned as to link up with Mavisbank Quay on the west, which was 25-ft. in front of the old wall, and with Springfield Quay on the east, which was 7-ft. in front. The western portion for a length of 785-ft. is being built in the river in front of the old wall, but the eastern portion for a length of 490-ft. involves taking down the old wall. At the western portion, however, the timber sheet piling, which was driven to strengthen the existing wall, had a considerable batter and it was necessary to draw this in order to give room for the new work. The drawing of this piling was done by means of a strong block and tackle fixing at the bow of one of the dredgers, and in order to minimize the danger of the old wall collapsing when this sheeting was withdrawn, the river bed alongside the quay was first filled up with clay to about low water mark.

The general method of construction of the new wall is as follows:—

A line of 10-in. timber sheet piling 43 to 45-ft. in length is driven in bays of about 2-ft. 3-in. wide to a depth of 13-ft. below foundation level. This piling has a batter of ½-in. to 1-ft., and forms the permanent riverside face of the substructure. Parallel to this, and at a distance of 19-ft. from it, a line of temporary steel sheet piling is driven to a depth of about 9-ft. below foundation level and the space between these two lines of sheeting divided into pockets about 30-ft. in length by cross bulkheads of steel sheet piling. After these pockets have been well strutted to resist pressure from without, they are excavated to foundation level by means of a 44 cu. ft. grab, the bottom being levelled by diver. The pockets are then filled with concrete deposited under water in steel hopper buckets with hinged bottoms, and a capacity of 2 cu. yards, the steel sheet piling being withdrawn as the concreting progresses. The timber sheet piling is cut off at a level of 4-ft. above low water and tied back to the concrete by means of a continuous 6-in. by 2-in. malleable iron waling along the front of the sheeting 12-in. below cut-off level, and a malleable iron tie-rod 2½-in. in diameter every 10-ft. having a 12 by 12 by ½-in. steel washer embedded in the concrete. The work above low water is done in the dry to suit the tides. The string course is of concrete, precast in lengths of 6-ft. and faced on the outside with granolithic. This string course, besides providing a rubbing face for vessels, serves to take up any irregularities in the line of the sheet piling. The superstructure above string course level is also of concrete, faced with granolithic 6-in. thick and finished on top with a granite coping 3-ft. 6-in. wide by 1-ft. 3-in. to 1-ft. 4-in. deep. Drain pipes 9-in. in diameter for surface water are carried through the superstructure every 60-ft., and mooring paals are provided and built into the concrete at approximately 30-ft. apart. Fig. 1 shows the extent of the work and Fig. 9 the typical cross-section of the new wall.

The filling behind the new wall is of ashes or other hard dry material with a rubble drain along the back of the wall at a depth of about 15-ft. below cope level. In the line of this drain there are four manholes in the length of the

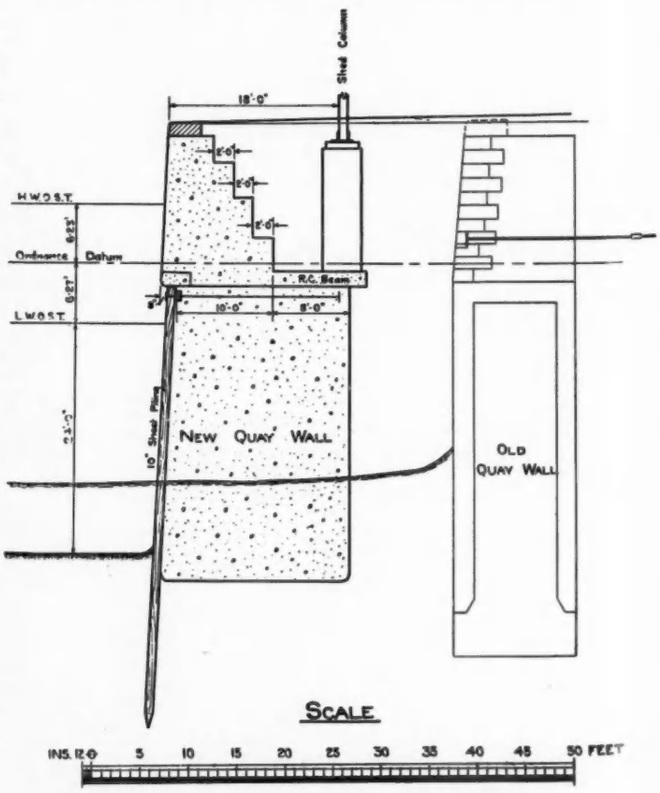


Fig. 10. Plantation Quay. Ordinary Wall.

* Trans. I.E.S., 1902-03, p. 305.

Recent Improvements and Reconstruction Works in Glasgow Harbour—continued

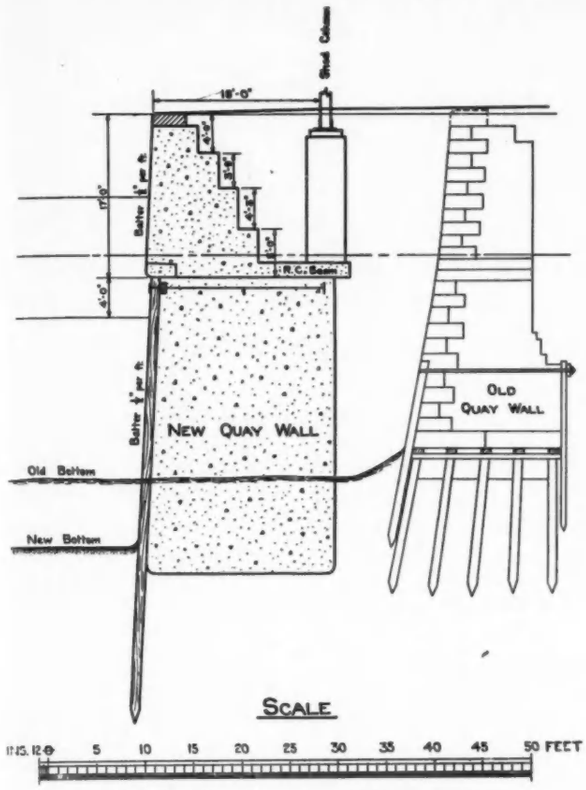


Fig. 11. Plantation Quay. Ordinary Wall.

reconstructed wall, each having a 12-in. diameter connecting pipe carried through the new wall to the river, and fitted with a flap valve to relieve any possible accumulation of water pressure which might endanger the stability of the wall.

The method of construction of the eastern portion of the quay is similar, but in this case the old wall must be demolished before the temporary sheet piling at the back of the new wall can be driven.

Plantation Quay Wall: Reconstruction.

In December, 1917, following an exceptionally low tide, a portion of old wall at Plantation Quay, 112 yards in length, collapsed, and at the same time a serious subsidence affected practically the whole of Mavisbank Quay wall. Consequent on these failures a programme of reconstruction and re-alignment was drawn up comprising the building of a new quay wall on the south side of the river starting about 950-ft. from the west end of Plantation Quay, and terminating at the east end of Mavisbank Quay, a total length of about 2,650-ft. This new wall was to be built in the river in front of the old wall, the line of the cope being advanced riverwards from 25 to 30-ft., thus allowing of an increase in the goods shed and quay breast accommodation. By 1925 this programme had been completed except for a stretch of 800-ft. between the new quay wall at Mavisbank and the eastern end of the new quay wall at Plantation, the reconstruction of which was not considered urgent. In 1929, however, the Trustees, with a view to relieving unemployment, decided to continue the rebuilding of Plantation Quay wall eastward for a distance of 633-ft., leaving 127-ft., which is occupied by the recesses and stairs

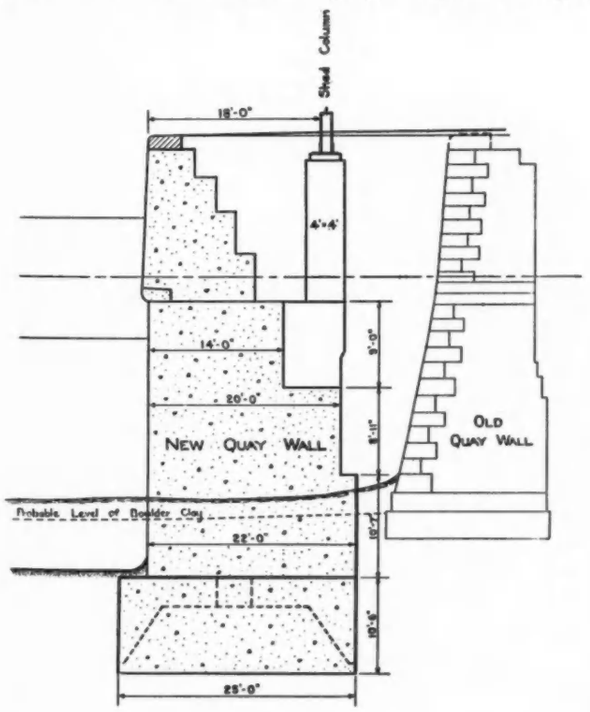


Fig. 12. Plantation Quay. Caisson Wall.

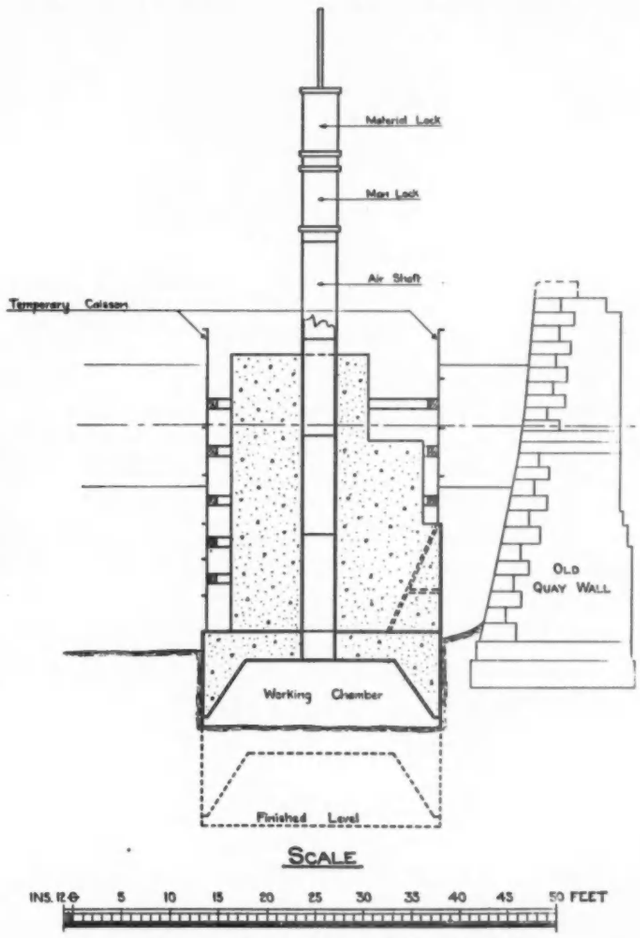


Fig. 13. Plantation Quay. Caisson Wall during Sinking.

of the Finnieston Ferry, to be built after the construction of the Finnieston Bridge renders the ferry unnecessary. For the first 353-ft. the construction of this wall was exactly similar to that already described for General Terminus Quay, Figs. 10 and 11, but as the work progressed eastward the level of the boulder clay rose rapidly and the driving of piles and the excavation of the pockets became increasingly difficult. A different method of construction was therefore necessary, and for the remaining length of 280-ft. it was decided to found the new wall on caissons sunk to the required depth under compressed air. Fig. 1 shows the location of this work and Fig. 12 shows the cross-section of the wall.

Four caissons are being sunk each 69-ft. 8-in. in length by 25-ft. wide and 10-ft. 6-in. high. They will be spaced 4-ft. apart and sunk to a depth of 56-ft. below cope level in order to allow of the berth being dredged to give 24-ft. of water at mean low water of ordinary spring tides. Two air shafts are provided for each caisson and the working chamber is 7-ft. 6-in. high above the cutting edge. The caissons are built of steel, the outer shell being of 5/16-in. plates and the sloping walls and roof of the working chamber of ¼-in. plates. They are stiffened by means of light transverse plate girders at 4-ft. centres immediately above the working chamber, the whole being suitably braced together. The cutting edges are formed of thick steel plates 15-in. by 1-in. The outer shell is con-

Recent Improvements and Reconstruction Works in Glasgow Harbour—continued

tinued upwards for a height of 31-ft. by means of steel strakes bolted together to form a temporary cofferdam within which the substructure of the new wall will be built. As the top of the caisson has to be sunk considerably below the foundation level of the existing quay wall, it was considered advisable to leave the back of the cofferdam in position for a height of about 11-ft. at each caisson, and this portion was therefore designed as part of the permanent caisson.

In the carrying out of the work the procedure is as follows: The bed of the river at the site of the caissons is first carefully levelled by dredging and thereafter a temporary staging is built on timber piles at the site of the eastmost or No. 1 caisson. The steel caissons are assembled and erected on this staging and the joints caulked and made as nearly as possible airtight. Concrete is then deposited around the working chamber sufficient to give the caisson stability and stiffness when it is lowered into the water by means of powerful jacks, and floated into position between guide piles. The first caisson to be made and launched is the westernmost or No. 4 caisson and this will be followed by No. 3, then by No. 2, and finally No. 1 will be launched and lowered directly into position. After each caisson has been floated into position it is lowered gradually until it rests on the river bed, the additional weight necessary for sinking being supplied by filling the caisson with concrete, building part of the wall and adding the temporary strakes, air locks, etc. After the caisson has been levelled on the river bed, the air compressors are connected up and the necessary pressure maintained in the working chamber while sinking proceeds in the usual way by excavation in this chamber, the material being brought up through the air locks. The weight necessary for overcoming the resistances to sinking is provided by continuing the building of the wall within the cofferdam, and the correct distribution of weight to ensure even sinking is secured either by partial flooding of the temporary caisson or the addition of kentledge if and where necessary. The partly sunk caisson is shown in Fig. 13.

Before the top of the caisson has sunk to the level of the river bed, the temporary strakes are removed, the substructure of the wall having been by this time carried above low water mark. After the caisson has reached its final depth the bottom is carefully levelled, the working chamber filled with concrete, the air locks and air shafts removed, and the wells sealed with concrete. The space between each pair of caissons is closed back and front with sheet piling, excavated by grab and filled with concrete, thus completing the substructure of the wall. The superstructure is then built of concrete and finished with a granite cope. The cross-section of the completed wall is shown in Fig. 12.

The reconstruction of the quay walls at General Terminus and Plantation Quays is being carried out departmentally, except that the building and sinking of the pneumatic caissons above referred to is being carried out under contract by Sir Wm. Arrol & Co., Ltd. The completion of these works besides providing much needed deep water berths at two important points in the harbour, will also add very considerably to the quay space and the shed accommodation thereon.

Prince's Dock, South Quay: Foundations for 40-ton Coaling Crane.

As this paper deals with recent improvements in Glasgow harbour, it would be incomplete were no reference made to the work which has been carried out on the South Quay of Prince's Dock, where the hydraulically-operated coal hoist has been replaced by a modern electrically-operated coaling crane. This crane, which is of a type already familiar about the harbour, is capable of travelling for a length of 320-ft. on the breast of the quay, and of handling a 30-ton coaling wagon. The building of this crane necessitated the provision of a new crane track at a distance of 35-ft. from the cope line in order to carry the back rail, the front rail being carried on the superstructure of the dock wall, the gauge of the crane track being 30-ft. With a crane of this capacity the point loads are necessarily heavy and, as each of the crane carriages consists of a group of four wheels the maximum load under any one carriage, either on the front or back track, may, in the worst condition of loading, reach a figure of 152 tons. It is obvious that to carry a load of this magnitude a special departure from the ordinary method of close-timber piling was necessary, and after careful consideration of all aspects of the problem, it was decided to carry the track on a continuous reinforced concrete beam supported by groups of piles, four in number, at intervals of 18-ft. as shown in Fig. 14. This drawing also shows a section through the pile cap and the reinforcement of the pile heads, alongside which will be seen the continuous duct provided to carry the power conductors to the crane. The crane rails are bolted down to short lengths of rolled steel joists 6-in. by 5-in., which are anchored to the beam. This work was commenced in August, 1930, and completed in March, 1931, and involved the entire revision of the layout of the sidings on the quay in the neighbourhood of the crane.

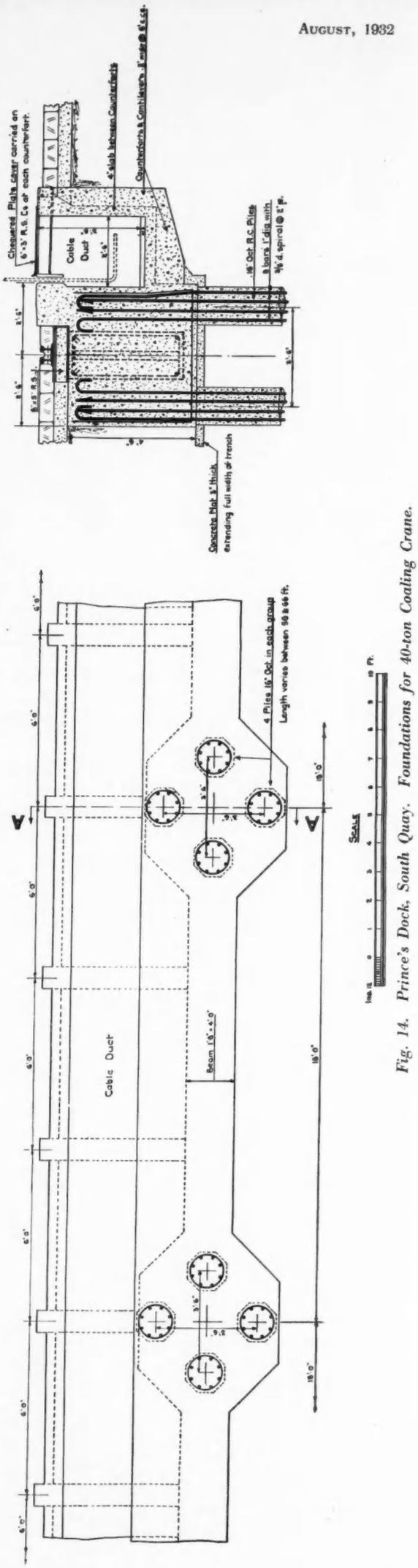


Fig. 14. Prince's Dock, South Quay. Foundations for 40-ton Coaling Crane.

The Port of Hamburg

(Continued from page 296)

should be permitted to enter and leave the basins without giving rise to any currents that might detrimentally affect the navigation of ships or the condition of the river bed. These requirements can only be said to have been complied with if the angle contained by the river and the longitudinal axis of the harbour basins is as acute as possible. Hence, the various basins are arranged more or less on the same plan, those on the right bank extending approximately in the direction from east to west and those on the left bank from south-east to north-west. Wherever a different arrangement has been preferred it has been done for some special reason connected with the locality.

The entrance to each harbour basin is located at the down-stream end, i.e., it faces the incoming vessels. The older type of basins—designed to accommodate small and medium-sized vessels—admit them from the river direct. The vessels, assisted by tugs, have to turn round in mid-stream, and as the river is sufficiently wide for this purpose they have no difficulty in doing so. The later type of basins—Kuhwärder, Ross-Neuhof, and Waltershof—are intended to accommodate large and very large vessels. They possess spacious outer basins communicating directly with the Elbe and affording the mammoth liners better facilities for turning round than they would have in the river itself.

Masters, pilots, and others all agree that navigation in the Port of Hamburg is particularly easy, and it is a fact that accidents to ships have been very rare exceptions.

Loading and Discharging Facilities.

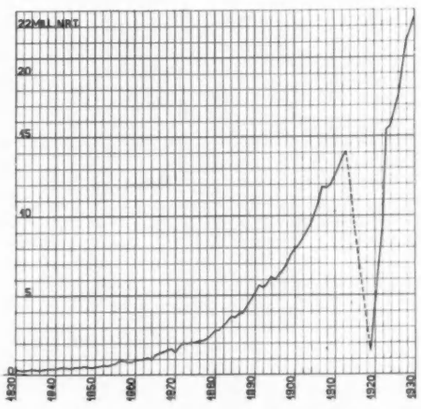
The peninsulas that have been left jutting out between the various harbour basins are provided with facilities required for loading and discharging sea-going vessels and for handling inward and outward-bound cargoes. The methods employed for these purposes are very much the same whatever the nature of the goods, so that the quay equipment in use is characterised by a general uniformity of type.

The piers projecting out into the water are used for identical purposes on both sides. They accommodate two rows of quay sheds symmetrically arranged and containing such accessory equipment as lifting gear, loading approaches, railway tracks, etc. A wide road separates the two rows of sheds. The width of the piers is determined by that of the sheds which, in its turn, depends on the measurements of the vessels despatched. Since, however, the chief measurement concerned is the draught of the vessels, it is obvious that the width of the sheds is to a large extent proportionate to the depth of the basins.

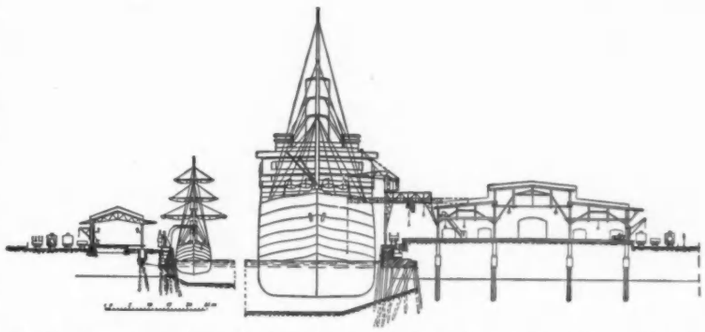
The subjoined table shows some of the principal items just referred to.

Group of Harbour Basins	Average Size of Ships in tons gross	Depth of Water in feet below M.H.W.	Width of Sheds in feet
Grosser Grasbrook ...	150—2,500	24—25	50—80
Baakenwärder, Veddel ...	800—14,000	30	70—140
Kleiner Grasbrook, Kuhwärder	6.000—20,000	30 - 32	160—165
Ross-Neuhof, Waltershof	For vessels of largest type	36	160 and above

The width of the basins, on the other hand, is not solely dependent on the pier installations. Those of recent origin, indeed, are far more spacious than the greater size of the vessels despatched from the piers alone would necessitate. Whilst the widths of the three chief basins on the right bank of the Elbe range between 250 and 400 feet, the width of those now in course of construction is up to 1,000 feet.



The Seagoing Shipping Traffic of Hamburg. A Century of Progress.



The Development of Quay Sheds keeps pace with the Increase in the Size of Ships

This increase is due to the development of the traffic in bulk goods which set in during the early 'eighties and which was further promoted by the establishment of the Free Port.

The connection between the increased traffic in bulk goods and the increased measurements of the new harbour basins is that, generally speaking, the technical equipment required for handling such cargoes is altogether different from that required for handling package freight—the type of cargo largely preponderating in the preceding area.

Bulk goods, from the point of view of port operation, differ from all others in that there is no need to sort them according to quality. Such sorting, however, is one of the principal operations performed on the piers, and as, of course, it is altogether superfluous for goods not requiring it to be temporarily stored in the pier sheds, such storage—being rather expensive—is eliminated whenever possible. The goods concerned are transhipped direct from the sea-going vessel into river boats or other craft, such transhipment taking place in mid-water and not alongside the piers or embankments. In the Port of Hamburg—where the distribution of goods within the harbour and the connection between sea-borne and up-river traffic are largely effected by small (open or covered) barges of 10 to 250 tons burden—this method of transhipment plays a very prominent part. It is spoken of as mid-stream transhipment as distinguished from transhipment on the quay. The term " mid-stream " must not be taken in its strictly literal sense, because it is not meant to imply that transhipment takes place exclusively in the open river. It is true that even now certain parts of the main river near its right (cityward) bank are separated from the fairway and set aside for such purposes, but the area thus reserved has long ceased to be sufficient. Therefore the open spaces of the harbour basins have to be used for " mid-stream " transhipment as well, and it has become the general practice for vessels discharging most of their cargoes at the piers to transfer part of them to small rivercraft lying along their waterside or taking up cargo from them. This circumstance, in fact, explains why the basins built since 1880 or thereabouts are very much wider than the long and narrow ones of earlier origin which approach the true type of railway docks. The intimate connection between sea-borne and up-river traffic and the relative importance of the quantities of package freight and bulk goods handled—factors which, as has been said, are typical for the Port of Hamburg—are recognisable in the design of the more recent harbour basins only.

In each of these comparatively wide basins one or more rows of dolphins have been rammed into the bottom soil. Their local name is Dückdalben, a word which is probably of Low German origin. The vessels are either moored to them direct or are kept at a certain distance by means of strong booms. The object of booming-off is to enable the lighters to take up positions both a-starboard and a-port of the vessels, so that work may proceed at both sides simultaneously. It frequently happens that vessels berthed in " mid-stream " have to avail themselves of floating steam winches (" donkeys "), floating cranes, or elevators, in addition to their own loading tackle, so that the demands of the available water space are often very great. When, therefore, designs for the construction of additional harbour basins with one row of dolphins down the middle and one more in front of each of the two opposite banks are prepared, provision is always made for a width of 1,000-ft.

Quay or pier walls, of course, are only required in those basins where quay operations actually take place. Where the transhipment of cargoes is effected in " mid-stream," they are not needed, and there the sides of the piers are made to slope. Harbour basins to which the foregoing particulars apply always represent a transitional stage of development. What usually happens is that a new basin is at first used solely for " mid-stream " transhipment and that its banks are made to slope,

The Port of Hamburg—continued

but that subsequently, when a demand for pier facilities arises, proper quay walls are constructed in place of the sloping embankments. A typical instance of a basin in the transitional stage is Waltershofer Hafen.

The Basins for Seagoing Vessels.

The summary on the opposite page contains some particulars concerning the 19 basins for sea-going vessels and the four similar areas separated from the fairway of the main river by rows of dolphins which, for the sake of brevity, may be described as "open-river harbours."

The particulars given in this summary must be supplemented by brief reference to the Holthusenkai on the southern bank of the river in the Veddel district, the water space north of which is not specially divided from the fairway of the river, so that it cannot properly be called an "open-river harbour." The name of the Reiherstieg—the banks of which are equipped with transhipment facilities for sea-going vessels—should also be added to the list of basins, etc., enumerated above.

The entrances to Kuhwärder-Hafen (Vorhafen, 106 acres) and Waltershofer Hafen (Parkhafen, 96 acres) have been left out in compiling the list. The same applies to the water spaces near the shipyards which are entirely or mainly used for shipbuilding purposes, more particularly to the Werfthafen of Messrs. Blohm & Voss and to the Vulcanhafen situated west of the Howaldt Shipbuilding Yard.

The Yachthafen (17 acres), occupying the western corner of Waltershof, is not used for transhipment purposes. It provides shelter and berthing space for the yachts frequenting the Elbe, the depth of water within it (26-ft. 6-in. below high water) being sufficient for their needs.

basins for sea-going vessels, another group of basins (of lower depth) exclusively used by rivercraft.

The inter-relation of the two groups is shown below.

A. On the right bank.

The following basins, etc., for sea-going ships, viz., Sandthor-Hafen, Grasbrook-Hafen, Magdeburger Hafen (southern section), Baaken-Hafen, Schiffbauerhafen, Strandhafen and Kirchenpauer-Hafen, connect with the following basins for rivercraft, viz., Madgeburger Hafen (northern section), Binnenhafen, Brookthorhafen, Ericus-Graben, Oberhafen, Oberhafen-Canal, Deichhafen and Billhafen.

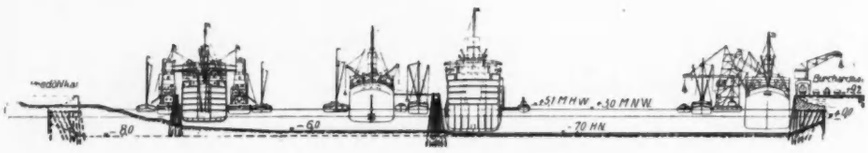
B. On the left bank.

1. The following basins, etc. for sea-going ships, viz., Segelschiffhafen, Hansahafen, Indiahafen, Südwesthafen, Grenzcanal, Reiherstieg and Holthusenkai, connect with the following basins for rivercraft, viz., Moldauhafen, Saalehafen, Spreehafen and Klütjenfelder Hafen.

2. The following basins for sea-going ships, viz., Kuhwärderhafen, Kaiser Wilhelm-Hafen, Ellerholzhafen, Oderhafen and Rosshafen, connect with the following basins for rivercraft, viz., Travehafen and Rodewischhafen.

3. The following basins for sea-going ships, viz., Waltershofer Hafen, Griesenwärder-Hafen and Petroleumhafen, connect with the following basin for rivercraft, viz., Rugenberger Hafen.

In addition to the groups of basins for rivercraft referred to above, there are two others somewhat detached from them, viz., Peutehafen on the left bank, capable of accommodating a large number of barges, and the still larger Billwärder Bucht on the right bank.



A Sectional View of Waltershofer Hafen.

The Basins for River Craft.

A description of the basins, etc., for sea-going vessels alone could never convey a complete idea of the Port of Hamburg, because it would contain no reference to one of its most important functions, which is to serve as the connecting link between overseas shipping and the up-river transportation business. The whole port, from the traffic point of view, may be said to have two faces: one looking down-stream towards the sea, and another looking up-stream towards its hinterland, and this two-fold character is also clearly recognisable in the design of each component part. Thus, for instance, most of the basins for sea-going vessels have two entrances: a lower one used by sea-going vessels and an upper one used by rivercraft.

The paramount importance of Hamburg as a river port has already been emphasised in the preceding pages. Few people realise the enormous demands for space that have to be satisfied in order to accommodate not only the sea-going vessels, but also the large numbers of barges ministering to their needs. At times, indeed, space has to be found for as many as 2,000 river vessels simultaneously. The measurements of barges of more than 1,000 tons capacity range from 230 to 265-ft. in length and from 30 to 33-ft. in width, thus exceeding those of many small sea-going vessels. It is therefore necessary to make ample provision for the needs of up-river traffic whenever the port accommodation as a whole has to be augmented, because river vessels, owing to the greater dependence of the river traffic on ice conditions, depth of water, and economic fluctuations, generally remain in port much longer than sea-going vessels. It happens, indeed, comparatively often that huge quantities of bulk goods are not discharged from barges until they are actually sold. Moreover, considerable water spaces of low depth in close proximity to sea-going vessels are not only required for the large up-river barges, but also for the smaller ones, called Schuten, which are used for the local traffic within the port. Their registered number is about 5,000, besides which there are 540 passenger boats and tugs and 850 launches.

It is obvious that the transfer of goods between sea-going and river vessels, no matter whether it is effected with or without the use of pier sheds, must take place within the basins, etc., for sea-going vessels, whilst it is equally obvious that the berths for sea-going vessels would constitute the worst imaginable accommodation for rivercraft. Nevertheless, the principle of linking up the two types of vessels as closely as possible has been carefully and consistently applied throughout, the method adopted being to provide, in close proximity to each group of

The depth of water in the basins for rivercraft ranges from 13-ft. 5½-in. to 20-ft. below high water (equivalent to 6-ft. 3½-in. to 12-ft. 10-in. below low water). Their banks are made to slope—except where they are intended to serve special purposes—and rows of dolphins to which vessels can be moored are in close proximity to them. As a rule, there are additional dolphins near the middle parts of the basins. In order to facilitate the shore communications of barge masters who, together with their families, are often compelled to spend weeks and even months in these basins on board their floating homes, the banks are provided with sets of steps at short distances from each other. Some of them are made accessible by the provision of floating booms covered with wooden flooring.

The very numerous tugs and launches are mainly accommodated in the upper part of the Niederhafen off Vorsetzen and in the Binnenhafen, where large numbers of them may be seen together before and after working hours.

The Canal System.

The rivercraft basins provide safe and unmolested berthing space for up-river craft, so that the brisk traffic in the basins for sea-going vessels does not in the least interfere with the movements of the barges despite the short distance that separates the two groups of basins. So long as no other arrangements are made for them, the up-river barges are accommodated in one of the rivercraft basins. The banks of some of these are lined with warehouses, and when such is the case part of the cargo is discharged into them. By far the greater amount, however, is disposed of in the basins for sea-going vessels, and there, too, the return cargoes are taken. For reasons already explained, no barge remains any longer in those basins than the work of transhipment requires, and as each may have to discharge into (or load from) several sea-going vessels and to do so at different times, it may have to proceed to and from its berth more than once. Special care has therefore been taken to make the passages between the basins used by the two kinds of vessels as short and as safe as possible. Wherever local conditions permit, short direct water connections have been provided between the upper ends (i.e., those farthest away from the river) of the basins for sea-going vessels and the adjoining ones for rivercraft (e.g., Sandthor-Hafen, Baaken-Hafen, Segelschiffhafen, Hansahafen, Kuhwärderhafen, Kaiser Wilhelm-Hafen, Rosshafen, Waltershofer Hafen). Thus up-river barges are enabled to avoid the main channel of the Elbe and the lower entrances to the basins, these latter being exclusively used by sea-going vessels. The result

The Port of Hamburg

Summary of Basins and "Open-River Harbours"

Name of Harbour Basin or Open River Harbour	Date of Opening	Area of Water Space	Width of Basin	Depth of Water below M.H.W.	Length of Rows of Dolphins	Names and Particulars of the Embankments, Piers, Transit Sheds and Warehouses
A. ON THE RIGHT BANK.						
I. Neustadt, off Johannisbollwerk.						
1. Niederhafen (an open-river harbour)	About the middle of the 17th century	19 acres	330 ft.	26 ft.	3,600 ft.	Johannisbollwerk (1,000 ft.) Two transit sheds not specially named
II. Grober Grasbrook.						
2. Sandthor-Hafen	1866	24 acres	260 to 330 ft.	24 ft.	—	Sandthorquai (3,300 ft.) Transit sheds 1 to 7. Kaiserquai (2,900 ft.) Transit sheds 8 to 12
3. Schiffbauerhafen (an open-river harbour)	1882	3 acres	200 ft.	25 ft.	660 ft.	Quay Warehouse "A"
4. Grasbrook-Hafen	1872	16 acres	260 to 500 ft.	25 ft.	—	Dalmannquai (2,300 ft.) Transit sheds 13 to 15. Hubenerquai (2,100 ft.) Transit sheds 16 to 18. Cold Storage building for herrings.
5. Strandhafen (an open-river harbour)	1879	8 acres	200 ft.	25 to 27 ft.	4,000 ft.	Strandquai (1,840 ft.) Transit sheds 19 to 21
6. Magdeburger Hafen (accessible to seagoing vessels as far as the bridge only)	1888	4 acres	295 ft.	24 to 30 ft.	—	West bank (no special name, 690 ft.) Fruit shed "C" Magdeburger Kai (330 ft.) Fruit shed "A"
III. Baakenwärder.						
7. Baaken-Hafen	1887	44 acres	400 to 500 ft.	30 ft.	3,000 ft.	Versmannquai (4,500 ft.) Fruit sheds "A," "B," 22, 23 and 24, transit shed 25
8. Kirchenpauer-Hafen (an open-river harbour)	1891	21 acres	260 ft.	27 ft.	6,400 ft.	Petersenquai (4,100 ft.) Transit sheds 26 to 29 Kirchenpauerquai (3,750 ft.) Transit sheds 30 to 33 Kohlenkai
B. ON THE LEFT BANK.						
IV. Veddel.						
9. Segelschiffhafen	1888	85 acres	525 to 1,000 ft.	30 ft.	12,800 ft.	Asiaquai (4,000 ft.) Transit sheds 34 to 37. Amsinckkai (770 ft.) Transit shed 48. Amerikaquai (4,900 ft.) Transit sheds 38 to 42
10. Hansahafen	1893	90 acres	400 to 1,300 ft.	30 ft.	10,900 ft.	O'Swaldquai (5,300 ft.) Transit sheds 43 to 47. Bremer Kai (1,900 ft.) Transit sheds 50 and 51.
11. Indiahafen	1893	27 acres	400 to 500 ft.	30 ft.	2,600 ft.	Australiaquai (2,150 ft.) Transit sheds 52 and 53. Indiaquai (425 ft.) Afrikaquai (3,100 ft.) Transit sheds 55 to 57
V. Kleiner Grasbrook.						
12. Sudwest-Hafen	1876	28 acres	330 to 725 ft.	33 ft.	3,450 ft.	Togokai (not yet completely equipped). Kamerunkai (3,000 ft.) Transit sheds 60 to 62 Windhukkai (1,150 ft.) Transit shed 59
13. Grenzcanal	1909	24 acres	260 to 330 ft.	27 ft. (near west bank only)	825 ft.	Banks not specially named. Transit sheds 54 and 64
VI. Kuhwärder.						
14. Kuhwärderhafen	1902	57 acres	660 to 750 ft.	30 to 40 ft.	3,100 ft.	Steinwärder Ufer (3,550 ft.) Werftkai. Grevenhof-Ufer (3,350 ft.) Transit sheds 69 and 70, transit sheds and warehouses "A" to "F." Mittelufer (410 ft.). Grain warehouse
15. Kaiser Wilhelm-Hafen	1903	58 acres	660 ft.	32 ft.	4,600 ft.	Auguste Victoria-Quai (3,600 ft.) Transit sheds 71 to 73. Reiherquai (600 ft.) Kronprinzquai (3,000 ft.) Transit sheds 74 and 75
16. Ellerholzhafen	1903	69 acres	590 ft.	32 ft.	3,400 ft.	Monckebergquai (3,000 ft.) Transit sheds 76 and 77
17. Kohlenschiffhafen	1913	104 acres	1,300 ft. or less	30 ft.	8,250 ft.	Banks not specially named
VII. Ross-Neuhof.						
18. Oderhafen	1903	33 acres	Of triangular shape	36 ft., to be increased to 40 ft.	3,300 ft.	Sthamerkai (2,150 ft.) Transit sheds 80 and 81. Chilekai (1,900 ft.) Transit sheds 82 and 83
19. Rosshafen	1908	43 acres	660 ft.	do.	4,600 ft.	Rossquai (2,400 ft.) Transit sheds 84 and 85, cold storage warehouse. Hachmannkai (2,750 ft.) Storage place for foreign timber
VIII. Waltershof.						
20. Waltershofer Hafen	1915	123 acres	920 ft.	33 ft., to be increased to 40 ft.	13,400 ft.	Predohlkai (5,150 ft.) Burchardkai (5000 ft.)
21. Griesenwärder Hafen	1923	79 acres	625 ft.	36 ft., to be increased to 40 ft.	6,900 ft.	Diestelkai (6,100 ft.) Stoltenkai (4,250 ft.)
22. Maakenwärder Hafen	1924	63 acres	720 ft. or less	20 ft., accessible to seagoing vessels in parts only	—	South bank (not specially named, 4,600 ft.)
23. Petroleum-Hafen	1913	37 acres	490 ft.	35 ft.	5,180 ft.	South bank (not specially named, 3,250 ft.). North bank (not specially named, 3,250ft.)

The Port of Hamburg—continued

is that each type of vessel has its own waterways assigned to it, so that neither of them can interfere with the movements of the other. This is a great advantage, inasmuch as it enhances the safety of harbour traffic, diminishes the risk of accidents, and expedites the work performed by both kinds of vessels.

In order to apply this principle all round and to make the upper entrances of the basins for sea-going vessels accessible to up-river barges, two belt canals—one skirting the northern, and one skirting the southern edge of the harbour area—have been constructed.

The southern belt canal starts near the eastern extremity of the port, west of the entrance to Peutehafen, its various sections being designated as follows: Müggenburger Canal—Müggenburger Zollhafen—Müggenburger Durchfahrt—Spreehafen—Veddelcanal—Ellerholzkanal—Rosskanal (contemplated extension beyond the Köhlbrand, through Rugenberger Hafen).

The northern belt canal consists of Oberhafen-Canal, Oberhafen, Zollcanal, Binnenhafen and Niederhafen.

Upper Storey of one of the Seven Heatable Fruit Sheds.

The Goods Sheds used in connection with Riverborne Traffic.

It has already been stated that fairly considerable quantities of cargo that are destined for export and reach the port by rivercraft are temporarily transferred to store barges if they are not intended to be discharged into sea-going vessels directly they arrive, and that berthing space is provided for them in all the basins used by river vessels. In addition, however, a number of transit and storage sheds are available for the same purpose. Most of them are owned by the leading companies engaged in river transportation. Thus, the Neue Norddeutsche und Vereinigte Elbe-Schiffahrts A.-G. owns such a shed on Prager Ufer, Moldauhafen, which is provided with especially modern and efficient equipment. The same company also owns some sheds along Oberhafen between the swing bridge and Erste Hammerbrookschleuse. Not only up-river barges, but also express cargo steamers (some of them with passenger accommodation) to Lauenburg, Lübeck, Saxony, Anhalt, Magdeburg, Berlin and destinations further east, are despatched from Oberhafen and Oberhafen-Canal, and there the above-named company and also the Schlesische Dampfer-Compagnie Berliner Lloyd A.G. have their cargo sheds.

The large new two-storey shed near Billhafen, equipped with 5-ton cranes and owned by the last-named company, is one of the most important buildings for river transportation in the port. Some other storage concerns are domiciled in the so-called Haken.

Under the terms of the Treaty of Versailles (articles 263 and 264) the Hallesches Ufer on Saalehafen with Shed No. 49 and part of the adjoining Dresdener Ufer on Moldauhafen have been leased to Czechoslovakia for the purposes of river transportation. The same country has also acquired the narrow spit between Peutehafen and Peuter Canal, where it is intended to establish a large transhipment plant within the area of the Customs Union, as well as some other facilities.

The Locks.

In the harbour basins the water is much calmer than in the open river—a circumstance of great importance to sea-going vessels during loading and unloading, and even more so to up-river barges and lighters. Within the basins, all vessels are protected from the currents caused by incoming and outgoing tides which, at times, are very strong.

It stands to reason that the elimination of the current in a port accessible at all tides can only be brought about by providing locks for the upper entrances to the various harbour basins, so that, in certain places, rivercraft has to pass through such locks. These locks, however, are altogether different from those used in dock harbours and from canal locks. They are not intended to overcome differences in the level of water, but merely to exclude the current. Although they are of the chamber-lock type and possess upper and lower gates, no time is spent by vessels in waiting for the chamber to be filled or emptied. All that has to be done is to keep one gate always closed, i.e., to abstain from opening the one before the other has been closed. The gates are constructed so as to move very freely, and can be opened in about one minute. The distance between the two gates of any lock is so large that practically no delay is caused to the passage of vessels, provided these latter are skilfully handled. Moreover, for the double purpose of reducing to a minimum the time spent in locks and of keeping as low as possible the cost of construction, each separate lock is made to serve, as much as possible, the needs of a whole group of basins. In this way it has been found possible to limit the number of locks to six, viz., four on the left and two on the right bank of the Elbe.

The Müggenburger Doppelschleuse, located at the junction of the main Elbe and Müggenburger Canal, eliminates the current from the whole area extending from there to the Reiherstieg and containing the Peute, Veddel and Kleiner Grasbrook basins. The next two locks are the Ellerholz-Doppelschleuse above Ellerholzhafen near Kohlenkai and the Grevenhof-Schleuse in Grevenhof-Canal, a waterway connecting Reiherstieg and Kuhwärder-Hafen. These two locks protect the whole district of the Kuhwärder and Ross-Neuhof, up to the Köhlbrand, from the effects of the through-current. Consequently, the fourth and last of the left-bank locks, the Rugenberger Doppelschleuse, is located west of the waterway just named. It leads from the latter to the Rugerberger Hafen and guards the Waltershof group of basins against the current.

Of the two locks on the right bank of the river, the first (Baakenschleuse) is situated in the passage leading from Oberhafen-Canal to Baakenhafen. It exclusively serves the needs of this one basin, whilst the group of basins on Grosser Grasbrook is protected by the Brookthor-Schleuse, located between Brookthor-Hafen and Sandthor-Hafen.

The locks also serve a useful purpose in that they prevent the current—and therefore also the water power it possesses—from breaking up into small units, thus concentrating this power upon its most important hydrotechnical function, i.e., the maintenance of the depth of the river and its branches.

As the locks do not directly benefit shipping and as, in the general interest, any delay within them must be avoided, no fees are charged to vessels passing through them.

(*To be continued*)

Bombay Port Trust

At a meeting of the trustees of the Port of Bombay, held on 28th June, 1932, the Chairman announced that, subject to final audit, the accounts for the financial year ended 31st March, 1932, had been closed and the result of the year's working was a deficit of Rs.22.69 lakhs on General Account and a surplus of Rs.76,640 on Pilotage Account. The deficit will be met from the Revenue Reserve Fund.

The Board accepted the tender of Messrs. Himatsingka Timber Ltd. for the supply of 6,883 cu. ft. of Nepal Sal railway crossing timbers for maintenance renewals on the Port Trust Railway during 1932-33.

Expenditure of Rs.27,000 for special repairs to a number of hydraulic cranes in the Docks and of Rs.4,956 for re-laying Sewri-Jackeria Bunder Road was sanctioned.

Manchester Ship Canal Company

The traffic receipts for the month of June, 1932, amounted to £101,095 against £100,485 in June last year, an increase of £610.

The traffic receipts for the half-year ended June 30th, 1932, amounted to £596,079 as compared with £592,886 for the corresponding period of last year, an increase of £3,193.

The net revenue of the whole of the undertaking for the half-year (after providing for interest and fixed charges) was £20,388 more than the corresponding half-year in 1931.

Italian Harbour Affairs

THE Consorzio Autonomo del Porto di Genova has held its annual general meeting, during which Commander F. Negrotto Cambiaso read the report on the situation of shipping during the 1931-1932 fiscal year. Commander Negrotto referred to the fact that there was as yet no revival in shipping, but that the situation at Genoa is no worse than at other ports, and that shipping, especially at this Italian port, is influenced more than anything else by the fluctuations of the economic situation. The following figures reflect the situation at Genoa:—

	1930 January-December No.	1930 January-December N.R.T.	1931 January-December No.	1931 January-December N.R.T.	Difference No.	Difference N.R.T.
Arrivals ...	5,317	10,627,700	4,975	10,141,500	—342	—486,200
Clearances ...	5,234	10,411,521	4,906	10,042,399	—328	—369,122
	10,551	21,039,221	9,881	20,183,899	—670	—855,322

	1931 January-May	1931 January-May	1932 January-May	1932 January-May	Difference	Difference
Arrivals ...	2,099	4,284,436	1,970	4,008,353	—129	—276,083
Clearances ...	2,045	4,231,363	2,012	4,071,330	—33	—160,033
	4,144	8,515,799	3,982	8,079,683	—162	—436,116

Arrivals of Goods	1930 January-December Tons	1931 January-December Tons	Difference Tons
Coal	2,728,824	2,618,747	—110,077
Metals	281,366	178,839	—102,527
Cereals	1,122,087	1,009,433	—112,654
Oilseeds	117,243	161,313	+44,070
Oil	353,082	406,402	+53,320
Phosphates	187,296	79,792	—107,504
Lumber	141,905	118,128	—23,777
Cotton	153,415	136,331	—17,084
Wool	42,467	41,588	—879
Skins	25,523	22,358	—3,165
Other Goods ...	1,087,420	944,596	—142,824
Total ...	6,240,628	5,717,527	—523,101

	1931 January-May Tons	1932 January-May Tons	Difference Tons
Coal	1,069,713	891,109	—178,604
Metals	76,030	76,833	+803
Cereals	402,269	343,038	—59,231
Oilseeds	79,195	74,101	—5,094
Oil	184,920	149,926	—34,994
Phosphates	45,722	23,370	—22,352
Lumber	44,008	43,281	—727
Cotton	60,738	79,035	+18,297
Wool	19,377	31,183	+11,806
Skins	10,043	6,915	—3,128
Other Goods ...	413,849	419,949	+6,100
Total ...	2,405,864	2,138,740	—267,124

Clearances of Goods	1930 January-December Tons	1931 January-December Tons	Difference Tons
Various Goods ...	880,355	850,067	—30,288
Ships' Supplies ...	19,950	20,054	+104
Bunkers: Coal ...	319,356	278,093	—41,263
Fuel ...	189,130	241,557	+52,427
Total ...	1,408,791	1,389,771	—19,020

	1931 January-May Tons	1932 January-May Tons	Difference Tons
Various Goods ...	360,457	360,059	—398
Ships' Supplies ...	7,901	7,470	—431
Bunkers: Coal ...	123,524	98,572	—24,952
Oil ...	100,380	66,966	—33,414
Total ...	592,262	533,067	—59,195

	Percentage of Fluctuation in 1931 compared to 1930 Per cent.	Percentage of Fluctuation in 1932 compared to 1931 Per cent.
Goods Unloaded	—8.38	—11.08
Goods Shipped	—3.44	—0 11
Bunkers and Ships' Supplies	+2.13	—25.36
Total Traffic	—7.09	—10.86

Coal and cereals predominate in Genoese shipping. The imports of coal have shown a decrease of 4.03 per cent. in 1931, in respect to 1930, and of 16.69 per cent. in the January-May period, 1932, compared to the first five months of 1931. This large decrease is not wholly due to reduced industrial activity. The transformation of a large number of ships from coal burning into oil burning has greatly influenced the consumption of coal.

Cereal imports have decreased owing to the increased Italian production of wheat and phosphate imports have decreased owing to an increased output of chemical fertilizers. During the first five months of 1932 imports of cotton have shown an increase of 18,287 tons, and imports of wool of 11,806 tons. These figures clearly show that the depression is due to the general economic situation, and not to the efficiency of the port itself. The decrease in total traffic, which was 9.17 per cent. in 1930 in respect to 1929, reached 7.09 per cent. in 1931 in respect to 1930, and 10.86 per cent. in the first five months of 1932 compared to the corresponding period of 1931.

Exports, however, have shown a smaller decrease than imports. Another point, which should be taken into consideration is that foreign transit trade through the Port of Genoa has shown an increase during the first five months of 1932 as is shown in the following figures:—

	1930 January-December Cleared Tons	1930 January-December Arrived Tons	1931 January-December Cleared Tons	1931 January-December Arrived Tons	Difference Cleared Tons	Difference Arrived Tons
Switzerland ...	37,283	118,671	30,242	117,439	—7,041	—1,232
Austria	2,444	1,663	1,096	956	—1,348	—707
France	1,921	1,089	1,815	1,013	—106	—76
Other countries	386	104	477	75	+91	—29
	42,034	121,527	33,630	119,483	—8,404	—2,044

	1931 January-May	1931 January-May	1932 January-May	1932 January-May	Difference	Difference
Switzerland ...	13,485	39,635	11,185	43,764	—2,250	+4,129
Austria	418	469	472	675	+54	+206
France	982	424	429	595	—553	+171
Other countries	380	9	43	42	—337	+33
	15,215	40,537	12,129	45,076	—3,086	+4,539

Of the total trade at all Italian ports, Genoese shipping represented in 1930 19.98 per cent., in 1931 20.24 per cent. and in 1932 19.84 per cent. Commander Negrotto Cambiaso referred to the extensive enlargements which are being carried out west from the old Port of Genoa, and stated that in the Mussolini Dock 800 metres of breakwater and the two piers, measuring 400 metres in length and 150 metres in breadth, have practically been completed. In the course of this summer these quays will be provided with railway facilities, etc. Also the second group of works included in the Mussolini Dock are well forward. The extension of the Molo Galliera has been completed over the whole length of 400 metres. Special attention has been paid to the work of strengthening the outer rocks of the Galliera Mole, which had shown considerable erosion due to the action of the waves, and special attention had to be paid to the study of the most appropriate mortar to be employed for the purpose.

Considerable progress has also been made on the works, which have been found necessary to place the Port of Genoa in a position to handle the two 51,000 ton liners, the "Rex" and the "Conte di Savoia," which the Italian owners have decided to build for the Genoa-New York express service. These works include the increase of unloading and loading facilities on the dry docks (S.A. Ente Bacini), the cutting down of the head of the Molo Vecchio to facilitate the manœuvring of the large liners in the inner port, and the transformation of the Eastern quay of the Andrea Doria Mole into a second passenger landing stage, and the Ponte dei Mille, to be used by the 51,000 ton liners has been increased to 260 metres in length. The works included in the second group of the Mussolini Dock constructions are to be completed within 1933, and then the Port of Genoa will have at its disposal two additional moles. However, until the third and the fourth pier of the Mussolini Dock are built, only a certain portion of the quayage of the first two piers above referred to could be used by shipping. Owing to the fact that opinions in regard to the exploitation of these two piers differ very much, and owing to the crisis, according to Commander Negrotto Cambiaso the best course to be taken is to provide these moles with temporary fittings, in such a way as to improve the situation of shipping at Genoa. For the present it will be appropriate to fit them with 24 two and six tons portal electric cranes, which could in the future be transferred to some other pier, should it be found advantageous to place the other unloading facilities on the first two piers of the Mussolini Dock.

The Italian Government has made the appropriate allowance to enable the Azienda dei Magazzini Generali at Fiume to undertake the construction of a grain silo on the Molo Palermo, while a credit of six million lire has been approved to undertake the construction of a new port on the Island of Capri in the Gulf of Naples.

According to statistics, which have been published by the Consiglio Provinciale dell 'Economia at Trieste, shipping at that port during the first six months of 1932 included the following items:—

	January-June 1932 Centals	January-June 1931 Centals
ARRIVALS		
By rail	2,618,985	3,787,377
By sea	8,516,833	8,225,833
Total	11,135,818	12,013,210
CLEARANCES		
By rail	4,695,364	5,566,833
By sea	2,473,193	2,980,750
Total	7,168,557	8,547,583
TOTAL		
By rail	7,314,349	9,354,210
By sea	10,990,026	11,206,583
Total	18,304,375	20,560,793

Scottish Harbour Notes

New Coaling Plant at Ayr Harbour.

HUNDREDS of visitors collect at Ayr Harbour daily to watch the working of the speedy new coal-shipping plant being erected there for the London, Midland and Scottish Railway Company by a London firm. Waggons of coal are lined up in the adjacent siding, and each is pulled forward by means of capstans to a weighing table; then the waggon and its contents are lifted bodily at such an angle that the force of gravity alone is sufficient to cause the waggon to run forward on to the tipper which discharges the load into the waiting ship, and returns the waggon to the rails within forty seconds. It is reckoned that sixty waggons per hour may be discharged in this way which expedites and makes easier the work of the trimmers. The apparatus is part of the £100,000 scheme of the electrification which has been undertaken by the Harbour authorities, who for many years have been troubled over the decline in the export of goods. They are hopeful that this enterprising step will help to remedy the matter.

Improvements at Leith Docks.

Various schemes for the improvement of Leith Docks are at present being carried out, and when the local Dock Commissioners recently made their annual inspection of the dock undertaking the goodly progress of the new works was noted. At luncheon in the Dock Office after the inspection, Mr. Thomas Cowan, LL.D. (who presided) said that during the last few years they had effected reductions equal to about £25,000 per annum on harbour rates. Mr. William A. Whitelaw (Convener of the Works Committee) said that that day they had seen the new coal hoists and the new power station in operation. The Imperial Dock was now equipped with three hydraulic hoists, and the fact that two of these were movable was of great advantage to shipping. Other speakers also spoke in eulogistic terms of the progress made with the various works at the docks.

Eyemouth Harbour and Sand Silting.

Sand silting at the entrance to Eyemouth Harbour has for a long time been a source of much concern to the local Harbour Trustees, especially in view of the frequent necessity for dredging. The accumulation of sand has seriously interfered with the movements of the fishing fleet both on leaving and entering the port, and it is now proposed to adopt the suggestion of the engineer for the Fishery Board of Scotland for the provision of an experimental groyne. If found effectual this may result in the authorities laying down five others at a cost of about £2,500 provided the necessary funds can be raised.

Clyde Navigation Trustees' Annual Inspection.

Economy once again dictates a decision by the Clyde Navigation Trustees by confining the annual inspection of the river to members of the Trust, and it may be mentioned that this policy was originally adopted last year. On Tuesday, September 6th, the members and leading officials of the Trust will in their own craft make the annual inspection of the local harbours, and the new work in progress following upon the usual luncheon, and the suggestion regarding the restricted company making the inspection was made by Mr. W. F. Robertson (Chairman) at the last monthly meeting. Mr. Robertson said that there had been a quite definite feeling on this matter last year, and—as the new procedure meant a considerable saving to the Trust—he moved that this year's inspection be on the same limited lines. At the same meeting it was intimated that Mr. Matthew Henry Forrest had been appointed a new member of the Trust in room of his father—the late Mr. John Forrest—who had held this position for the long period of nineteen years.

Cullen Harbour and Pier Erosion.

With reference to the question of the erosion of the west pier of Cullen Harbour a report was recently considered by the Harbour Committee of the Cullen Town Council stating that they had examined the foundation of the pier where it showed signs of giving way, and that at low water it was found that a length of about forty feet would require very early repair. As this work would mean considerable expense, the Committee had instructed the Town Clerk to write to Mr. Knight (Inspector of the Fishery Board) inviting him to visit the harbour to make an inspection of both sides of the pier at the point concerned and to generally advise the Committee. The opinion was also expressed by the Committee that a further grant might be obtained on the strength of the Inspector's report. This report was considered at a meeting of the full Town Council, when it was agreed—in view of the urgency of repairs to prevent further damage—that the work should be immediately commenced under the direction of the local burgh surveyor.

Crinan Canal Improvements Proceeding Satisfactorily.

Improvements are proceeding apace on the Crinan Canal, and when completed such will prove of great advantage. The construction of the new sea lock (which is to replace the old one at the entrance to the pier at Ardrishaig) has proceeded without interruption. The cement concrete walls have now been built, and a squad of workmen are now engaged in clearing and deepening the channel. When the new sea lock is finished, the road from the Square at the head of the pier is to be diverted slightly towards the south side of the old road, and a new swing bridge will be erected over the new lock. When this lock is available for sea-going traffic, boats will be able to enter the canal basin at all stages of the tide, and this was not possible with the existing lock. A new lock is also being built at Crinan similar to that at Ardrishaig Pier, and a large squad of men are now engaged in carrying out this work which is at present chiefly confined to the channel.

It is of interest to add that rather an ingenious method has been adopted of warning the lock-keeper at Ardrishaig when a boat is about to pass through the canal. A float is located at the edge of the canal near the lock-keeper's house, and when the lock at Cairnbaan is opened, a wave (which is caused by the inrush of water) travels in a quarter of an hour a distance of about four miles to the float which, in passing, it lifts. This causes an electric bell in the lock-keeper's house to ring, and he is thus given warning of the approach of the incoming vessel. A further improvement has been effected at Dunardry (about the middle of the canal) where the catchment area is now extended by means of a new dam to increase the supply of water to the canal.

Dundee Harbour Trust.

Dundee Harbour Trust recently invited tenders for the supply, delivery, and installation in the electricity sub-station and annexe thereto at King George V. Wharf of a 500 k.v.a. transformer and an extension of the existing low tension switchboard, and also for the excavation and refilling of trenches for and the supplying, laying and jointing of connecting and distribution cables at the Wharf and No. 2 extension thereof. The matter is in the hands of the General Manager and Engineer (Mr. J. H. Thompson) of the Harbour Trust.

Isle of Man Harbours

The term of office of the Isle of Man Harbour Commissioners ended on 5th July last, and at a Tynwald Court held at Douglas on the 7th July, the retiring members (Messrs. R. C. Cain, M.L.C., J.P., C. Gill, M.H.K., J.P., C. R. Shimmin, M.H.K., J.P., and Capt. J. F. Crellin, M.H.K., M.C.) were again nominated by His Excellency the Lieut.-Governor to serve for a further period of three years, and the Court signified its approval to His Excellency's nominations.

In connection with a proposal to do away with the Reed Fog Signal on Douglas Head and to replace the same with a more powerful Electric Horn to be installed at the Head of the Douglas Breakwater, the above gentlemen, along with their Chairman (Mr. J. Qualtrough, M.L.C., J.P., H.M. Receiver-General) and accompanied by their Secretary (Mr. A. W. Tongue) and Engineer (Mr. W. H. Blaker, M.I.C.E.), paid a visit to Leith Docks on Tuesday, 12th July, and inspected the Fog Signal on the pier at that port. The party travelled by Liverpool to Edinburgh and returned via Ardrossan; during their stay in Edinburgh they were entertained to lunch by the Leith Dock Commissioners.

The existing Reed Signal was erected in 1907, by arrangement and agreement with the Northern Lighthouse Board; the capital cost of erecting this signal, £2,500, was met by the Harbour Commissioners, who also assumed responsibility for the cost of management and maintenance, which is carried out on their behalf by the Northern Lighthouse Board. For some years complaints have been made by masters of vessels using the port of Douglas that this present horn is of very little use to them.

Irish Harbour Matters

Dublin

Dublin Port: Eucharistic Congress Week Record.

AT a meeting of the Dublin Port and Docks Board held on 30th June, Mr. Walter Baird, who presided, dealt in detail with the manner in which the secretarial staff, the harbourmaster, his deputy and staff had handled the abnormal number of ships which visited Dublin in connection with the Eucharistic Congress.

The Secretary (Mr. Bailey) read a letter from Messrs. George Bell and Co., Ship Brokers, and Agents for various lines which had sent vessels, expressing appreciation of the manner in which the various ships were handled by the harbour staff.

The chairman said he could join with Messrs. Bell in their praise of the manner in which the work was done. Not a single accident of even the slightest nature had occurred. The Board had done everything it could to make the Eucharistic Congress a success. On Sunday, 26th June, the tonnage of vessels in the port and in Dublin Bay was:—

	Tons
Overseas Vessels in Dublin Bay	95,967
Overseas Vessels in the Port	105,803
Cross Channel Steamers in the Port	32.189
Tenders	2,385
Coal and Other Vessels in the Port	31,426
Total	267,770

Mr. Baird added that that was a record of which they could all feel proud.

Major Hollwey associated himself with the vote of thanks and said that after the visit of those ships, the companies to which they belonged would realise that the Liffey was safe for large liners. For that reason he felt sure that at least one company would pay another visit within the next year.

White Star and Cunard Lines.

Further letters of praise for the efficiency of the Dublin port authorities during Congress Week were read at the meeting of the Dublin Port and Docks Board, held on 7th July.

The White Star Line wrote to Capt. Webb, Harbour Master, stating that Capt. Quinn of their ss. " Doric " had asked them to " convey to you his appreciation of services and courtesy extended to him by your good self and your assistant, Capt. Twohig. He also wished me to mention that he never received more efficient service at any port in the world."

The Cunard Co. wrote expressing marked appreciation of the various ways in which they had been assisted by the Board and its representatives in the handling of Congress traffic.

Limerick

Limerick Dock Extension.

Having received the sanction of the Oireachtas for the extension of the floating dock and the construction of a railway link connecting the port with the Great Southern Railways system at Careys Road, Limerick, at an estimated cost of about £200,000, the Limerick Harbour Commissioners proposed to raise £100,000 by the issue of 5 per cent. preference stock, guaranteed by the Government.

The view was expressed at a meeting of the House Committee of the Board that the Free State Government's tariff policy would have a direct bearing on the position. Imports would be reduced, and there would be a consequent fall in the estimated surplus revenue to meet the payment of principal and interest on the guaranteed loan.

The committee felt that the Board would not be justified in going on with the project if the trade of the port was likely to suffer in this way, and it was decided to ask the Minister for Industry and Commerce to receive a deputation on the subject.

At a subsequent meeting of the Limerick Harbour Commissioners, the Secretary submitted a report in reference to the deputation representing the Board that waited on Mr. J. Ingram, Secretary, Marine Branch, Dept. of Industry and Commerce, in regard to the proposed scheme of Limerick dock development. Mr. Ingram, the report stated, gave a sympathetic hearing to the deputation and suggested that the Board should consider the question of carrying out a partial scheme of dock extension with its reserve fund, and that in the meantime the effect of tariffs on the Board's income should be definitely ascertained.

Mr. Bourke said that the attitude taken up by Mr. Ingram when he received the deputation led them to believe that they would get no assistance from the department in carrying out the full scheme of development. Having regard to the abnormal amount of destitution in the City, he thought that the Board should initiate a partial scheme.

The chairman (Mr. P. Tracey) thought that the Board should not go into details pending the reply of the Minister. As regards the suggestion of scrapping any part of their schemes, the Board never contemplated anything of the kind.

It was decided to inform the Minister that the Board intended to carry out the full scheme of development.

Cork

Cork Harbour Board's Scheme.

At the meeting of the Cork Harbour Board on the 6th July, the Chairman (Mr. R. Wallace), said that they were entitled to compliment themselves on the fact that during the recent Eucharistic Congress period they handled at the Port of Cork, without the slightest hitch, 29 liners of a tonnage of 562,367, carrying 9,096 passengers, 4,201 sacks of mails, and 5 motor cars.

He wished, he said, to lay before the Board the somewhat recent innovation of large liner companies in using their large passenger steamers, which heretofore were employed in North Atlantic tourist and emigrant trade, for short cruises varying from a week-end to ten days or a fortnight, and affording tourists an opportunity of making a number of daily excursions ashore at different ports. In his opinion these short cruises were going to develop. It was therefore desirable that tourists should have facilities to walk ashore from the liner on to the quay and the railway. With that object in view, it was desirable that the extension of the deep water quay, or the provision of a landing stage at Queenstown should be seriously considered. He asked the Board to appoint a special subcommittee to investigate and report back to the Board as to what additional accommodation could be provided for liners in the harbour.

He also would like to draw the attention of those concerned to the fact that Cork Harbour was the seaplane base for the United States Navy during the Great War, and the site and facilities used by the U.S. Navy were still at Aghada. On an inspection a short time ago by the Board's officials it was found that the site could be put into commission at very little cost.

The chairman added that Cork port handled more work than the combined ports of Dublin, Galway and Limerick.

Mr. P. Crowley said that the time was opportune for the scheme, and the Tourist Association would help in every way.

A committee was appointed to investigate the matter and report to the Board.

Belfast

Belfast Port Affairs.

At a meeting of the Belfast Harbour Board on the 5th July, Sir George Clark, Bart., presiding, the harbour master reported that 289 vessels entered the port in the period from 19th June to 2nd July, as follows, coastwise and cross-channel, 258; foreign, 24; non-trading 7.

The total tonnage of vessels which arrived at the port from January 1st to July 2nd was, coastwise and cross-channel, 1,365,854; a decrease of 7,992, compared with the corresponding period of 1931; foreign, 400,358, an increase of 39,785; non-trading, 25,501, a decrease of 14,782—total 1,791,713, an increase of 17,011.

A letter was read from the British Flying Boats, Ltd., Edinburgh, asking permission to operate a flying boat in Belfast Lough for the purpose of carrying out an experimental air service between Belfast and the Clyde for one week during August and to lay a mooring buoy in Whitehouse Roads.

After discussion it was decided to grant the permission and that harbour rates be not charged during the experimental period, subject to the buoy being laid in a position approved by the harbour master and to all other conditions necessary for the protection of the Board's interests being complied with.

A joint report from the leading officials respecting the most suitable equipment and lay-out of the quay on the East Wall of the Abercorn Basin was submitted. After discussion of the various matters and the question of protecting the East Quay wall of Abercorn Basin, it was decided to adopt the report and authorise the harbour engineer to proceed with the works mentioned and with the work of protecting the East Quay wall, Abercorn Basin, by means of a timber jetty, etc., at a total estimated cost of £10,100.

A notable event took place on the 2nd July, when for the first time in the history of the port of Belfast a Cunard liner came along the docks to land and embark passengers. The vessel, the " Antonia," was on one of its summer cruises and had on board between 500 and 600 passengers; most of whom landed to see the sights of the City and surrounding districts.

Another interesting event of the month was the berthing on the new North Channel of the Belfast Harbour of the first vessel, the ss. " Aranda," which arrived with a cargo of timber. There was 23-ft. of water, the same as in the Victoria Channel, and the vessel of 2,630 tons, was brought to her place without the slightest difficulty.

Near Eastern Port Matters

ACCORDING to statistics which have just been published in regard to shipping at Bulgarian ports during 1931, the following is a schedule of the share of the various countries in this trade:—

	No. of Ships	Net Registered Tons
Italian	309	648,199
Bulgarian ...	4,232	537,095
Great Britain ...	98	165,232
German	89	160,516
Dutch	62	101,589
Greek	66	97,120
Swedish ...	44	62,898
French	26	56,333
Other Countries	481	143,857
	5,407	1 972,839

A comparison of the above-mentioned figures for 1931 with those for the preceding years is shown in the following figures:

	No. of Ships	Net Registered Tons
1927	4,358	1,658,660
1928	5,001	1,782,848
1929	5,610	1,840,566
1930	5,952	1,973,386
1931	5,407	1,972,839

There has not been a large decrease in Bulgarian shipping. Burgas occupied in 1931 the first place, among the various Bulgarian ports, with 2,202 ships representing 949,019 n.r.t., and Varna with 635 ships and 713,119 n.r.t. The Bulgarian Government is considering the possibility of improving harbour facilities, particularly at Varna, and the advice of Dutch harbour engineers has just been requested before making a decision on the subject.

The Jugoslav Government seems to have put an end to the discussions regarding the construction of warehousing facilities at their ports, and has authorised the commencement of the building of two double storey concrete warehouses in the Port of Sussak, the construction of which is well advanced. It is stated that two identical warehouses are to be built shortly at Gruz (Dalmatia) where they are to be operated by the Chamber of Commerce and Industry of that port.

The Chambre Internationale de Navigation at Alexandretta has supplied the following schedule of goods unloaded and loaded at that port in the course of the past few years:—

	Goods Unloaded Tons	Goods Loaded Tons	Total Tons
1924	55,046	19,976	75,022
1925	71,411	17,371	88,782
1926	60,146	14,371	74,517
1927	75,714	19,821	95,535
1928	67,137	18,104	85,241
1929	83,391	28,028	111,419
1930	83,975	48,325	132,300
1931	82,016	44,888	126,904

With the increase of both imports and exports at Alexandretta there is also a corresponding progress in the tonnage of ships calling at that port, as is shown in the following figures:—

	Steamers		Sailing Vessels	
	No.	N.R.T.	No.	N.R.T.
1924	321	579,324	328	3,371
1925	354	625,279	324	7,865
1926	369	619,538	230	7,136
1927	340	554,300	349	7,930
1928	333	601,562	308	6,159
1929	376	699,638	288	7,258
1930	368	702,825	264	8,203
1931	332	642,403	113	5,203

It is confirmed that the French Government has decided to support the scheme of the Chamber of Commerce and Industry of Alexandretta regarding the construction of an oil dock at that port in order to attract the oil trade, which may arise from the exploitation of the Mesopotamia oil wells. It is announced that considerable progress has been made in the reorganisation of the Port of Beyrouth, where two new concrete warehouses with powerful electric cranes are to be built. The Chamber of Commerce and Industry at that port is trying to cut down tariffs for unloading and loading.

The Port of London Authority

London's Shipping.

During the week ended June 24th, 904 vessels, representing 941,325 net register tons, used the Port of London. 468 vessels (772,393 net register tons) were to and from Colonial and Foreign Ports, and 436 vessels (168,932 net register tons) were engaged in coaswise traffic.

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During the week ended July 1st, 806 vessels, representing 889,701 net register tons, used the Port of London. 437 vessels (727,638 net register tons) were to and from Colonial and Foreign Ports and 369 vessels (162,063 net register tons) were engaged in costwise traffic.

* * * *

During the week ended July 8th, 1,226 vessels, representing 876,375 net register tons, used the Port of London. 389 vessels (660,843 net register tons) were to and from Colonial and Foreign Ports, and 837 vessels (215,532 net register tons) were engaged in coastwise traffic.

* * * *

During the week ended July 15th, 997 vessels, representing 964,276 net register tons, used the Port of London. 435 vessels (702,909 net register tons) were to and from Colonial and Foreign Ports and 562 vessels (261,367 net register tons) were engaged in coastwise traffic.

Tilbury Passenger Landing Stage.

Thirty-seven vessels totalling 365,766 gross register tons, used the Tilbury Passenger Landing Stage during the month of June. Altogether 7,700 passengers were embarked or disembarked at the Stage, in addition to baggage and mails.

The Port of New Orleans

The movement of shipping at this port in May, 1932, displayed important increase over the movement for the same month of 1931, according to figures released by the Board of Commissioners of the Port of New Orleans.

During the month 220 seagoing vessels arrived, an increase of 8 vessels. There were 214 departures.

The vessels arriving from sea had a total gross tonnage of 915,971 tons, an increase of 85,909 tons.

Vessels using the public wharves aggregated 716,415 tons, an increase of 18,484 tons.

Cargo paying tollage amounted to 245,948 tons.

During the month 1,224,344 bunches of bananas were received by the Board's conveyors.

Substantial increases were recorded by many classes of freight moving over the wharves. Among the imports, wood and paper increased 3,879 tons; textiles increased 3,822 tons and miscellaneous freight increased 2,197 tons. Among the exports textiles increased 19,056 tons, vegetable food products increased 14,663 tons and ores, metals and their manufactures increased 5,172 tons.

The Inner Harbour Navigation Canal, connecting the Mississippi River and Lake Pontchartrain, showed its usual activity. During the month, 1,175 vessels, having a total gross tonnage of 457,716 tons used the canal.

An increase was also recorded in the movement of inland water craft. During the month 335 of such vessels, having a total tonnage of 120,330 tons arrived in port. This was an increase of 3,765 tons.

Of the 220 seagoing vessels which arrived during the month 139, or more than 63 per cent. flew the American flag. These American ships represented more than 67 per cent. of the total gross tonnage. Norway was second in number of ships and third in tonnage, while Honduras was second in tonnage and third in number of ships.

Following is a tabulation showing nationality, number of ships and total tonnage of seagoing vessels which arrived during the month:—

Nationality.	No. of Vessels.	Gross Tonnage.
American	139	614,949
British	8	46,185
Brazilian	2	13,360
Danish	1	2,484
Dutch	2	10,970
French	2	11,972
German	2	22,657
Honduran	20	61,256
Italian	6	34,557
Japanese	4	28,198
Nicaraguan	6	3,318
Norwegian	21	49,350
Panaman	1	4,370
Spanish	1	5,152
Swedish	2	7,193
	220	915,971